SyncMaster 230TSN/230MXN

LCD Display

User Manual

The color and the appearance may differ depending on the product, and the specifications are subject to change without prior notice to improve the performance.

SAMSUNG

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Safety Instructions

Notational

Note

These safety instructions must be followed to ensure your safety and prevent property damage.

Make sure to read the instructions carefully and use the product in the correct manner.

Warning / Caution

Failure to follow directions noted by this symbol could result in bodily harm or damage to the equipment.

Note

Prohibited	Important to read and understand at all times
Do not disassemble	Disconnect the plug from the outlet
Do not touch	Ground to prevent an electric shock

Power

When not used for extended period of time, set your computer to DPM.

If using a screen saver, set it to active screen mode.

The images here are for reference only, and are not applicable in all cases (or countries).

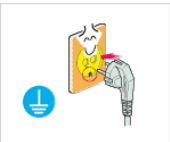
Shortcut to Anti-Afterimage Instructions

Do not use a damaged power cord or plug or a damaged or loose power outlet.

- Otherwise, this may result in electric shock or fire.

Do not touch the power plug with wet hands when removing or plugging the plug into the outlet.

- Otherwise, this may result in electric shock.



Make sure to connect the power cord to a grounded power outlet.

- Otherwise, it may result in electric shock or personal injury.

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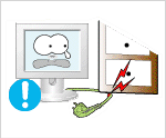
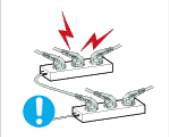
Ensure that the power plug is plugged into the power outlet firmly and correctly.

- Otherwise, this may result in fire.



Do not forcefully bend or pull the power plug and do not place any heavy material on it.

- Otherwise, this may result in fire.



Do not connect multiple appliances to the same power outlet.

- Otherwise, this may cause fire due to overheating.

Do not disconnect the power cord while using the product.

- Otherwise, this may result in damage to the product due to electric shock.

To disconnect the apparatus from the mains, the plug must be pulled out from the mains socket, therefore the mains plug shall be readily operable.

- Otherwise, this may cause electric shock or fire.

Use only the power cord provided by our company. Do not use the provided power cord of another product.

- Otherwise, this may result in fire or electric shock.

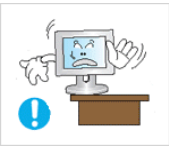
Installation

Be sure to contact an authorized Service Center when installing your monitor in a location with heavy dust, high or low temperatures, high humidity, and exposed to chemical substances and where it operates for 24 hours such as at airports, train stations etc.

Failure to do so may cause serious damage to your monitor.

Do not drop the monitor when moving it.

- This may cause damage to the product or the person carrying it.



When installing the product in a cabinet or rack, make sure that the front end of the bottom of the product does not project out.

- Otherwise, it may fall or cause personal injury.
- Use a cabinet or rack of a size appropriate to the product.

DO NOT PLACE CANDLES, MOSQUITO REPELLANT, CIGARETTES AND ANY HEATING APPLIANCES NEAR THE PRODUCT.

- Otherwise, this may result in fire.

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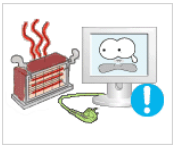
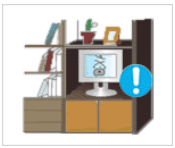


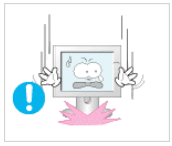
Keep heating appliances as far away from the power cord or the product as possible.

- Otherwise, this may result in electric shock or fire.



Do not install it in a badly ventilated location such as a bookcase or closet.

- Otherwise, this may result in fire due to an increase in the internal temperature.



When putting the product down, make sure to put it down softly.

- Otherwise, this may result in damage to the screen display.

Do not place the front of the product on the floor.

- Otherwise, this may result in damage to the screen display.

Ensure that an authorized installation company installs the wall mount.

- Otherwise, it may fall and cause personal injury.
- Make sure to install the specified wall mount.

Install your product in a well ventilated location. Ensure that there is a clearance of more than 4 inches (10 cm) from the wall.

- Otherwise, it may result in fire due to an increase in the internal temperature.

Ensure that the packaging vinyl is kept away from children.

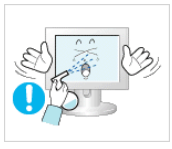
- Otherwise, it may result in serious harm (suffocation) if children play with it.

If the height of your monitor is adjustable, do not place any object or part of your body on the stand when lowering it.

- This may cause damage to the product or the person carrying it.

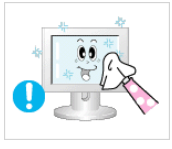
Clean

When cleaning the monitor case or the surface of the TFT-LCD screen, wipe with a slightly moistened, soft fabric.



Do not spray cleaner directly onto the surface of the product.

- Otherwise, this may result in the discoloration and distortion of the structure and the screen surface may peel off.



Clean the product using a soft cloth with a monitor cleaner only. If you must use a cleaner other than the monitor cleaner, dilute it with water at a ratio of 1:10.

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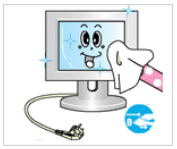
When cleaning the power plug pins or dusting the power outlet, clean it with a dry cloth.

- Otherwise, it may result in fire.



When cleaning the product, make sure to disconnect the power cord.

- Otherwise, it may result in electric shock or fire.

When cleaning the product, disconnect the power cord and clean it softly with a dry cloth.

- Do not use chemicals such as wax, benzene, alcohol, thinner, mosquito repellant, lubricant, or cleaner. These may change the appearance of the product surface and peel off the indication labels on the product.

Since the product housing is easily scratched, make sure to use the specified cloth only.

- Use the specified cloth adding only a little water. As the product may be scratched if there is any foreign material on the cloth, make sure to shake it thoroughly before using it.

When cleaning the product, do not spray water directly onto the main body of the product.

- Ensure that water does not enter the product and that it is not wet.
- Otherwise, this may result in electric shock, fire or a malfunction.

Others

The product is a high voltage product. Do not disassemble, repair or modify the product yourself.

- Otherwise, this may result in electric shock or fire. If the product needs to be repaired, contact a Service Center.

If there is a strange smell or a strange sound or smoke is coming from the product, disconnect the power plug immediately and contact a Service Center.

- Otherwise, this may result in electric shock or fire.

Do not place this product in a location exposed to moisture, dust, smoke, water, or in a car.

- Otherwise, this may result in electric shock or fire.

When you drop the product or the case is broken, turn the power off and disconnect the power cord. Contact a Service Center.

- Otherwise, this may result in electric shock or fire.

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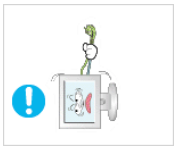
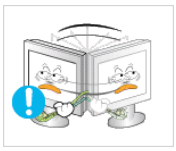
If thunder or lightning is occurring, do not touch the power cord or antenna cable.

- Otherwise, this may result in electric shock or fire.



Do not try to move the monitor by pulling only the wire or the signal cable.

- Otherwise, it may fall and result in electric shock, damage to the product or fire due to damage to the cable.

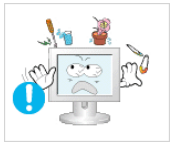


Do not lift or move the product back and forwards or right and left while only holding the power cord or signal cables.

- Otherwise, it may fall and result in electric shock, damage to the product or fire due to damage to the cable.

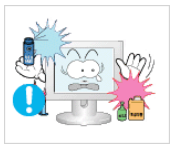
Make sure that the ventilating opening is not blocked by a table or curtain.

- Otherwise, it may result in fire due to an increase in the internal temperature.



Do not place any containers containing water, vases, flower-pots, medicines as well as any metal on the product.

- If water or a foreign material enters the product, disconnect the power cord and contact a Service Center.
- This may result in a product malfunction, electric shock, or fire.



Do not use or keep combustible spray or flammable material near the product.

- Otherwise, this may result in an explosion or fire.

Do not insert any metal, such as chopsticks, coins, pins and steel, or flammable objects, such as matches or paper, inside the product (through the ventilating openings, input and output terminals, etc).

- If water or foreign material enters the product, disconnect the power cord and contact a Service Center.
- Otherwise, this may result in electric shock or fire.

When using a fixed screen for a long time, an afterimage or stain may occur.

- If you are not using your product for a long period of time, put it into sleep mode or use a moving screen saver.

Set a resolution and frequency appropriate to the product.

- Otherwise, your eyesight may be damaged.

When using headphones or earphones, do not turn the volume too high.

- Having the sound too loud may damage your hearing.

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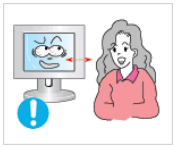
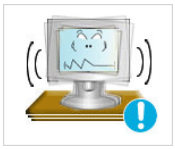


To avoid eyestrain, do not sit too close to the product.

Take a rest for at least five (5) minutes after using the monitor for one (1) hour.

This reduces eye fatigue.



Do not install it in an unstable location such as an unstable rack or uneven surface or a location exposed to vibrations.

- Otherwise, it may fall and cause personal injury and/or damage the product.
- If you use the product in a location exposed to vibrations, it may damage the product and result in fire.

When moving the product, turn the power off and disconnect the power plug, antenna cable, and all the cables connected to the product.

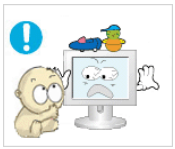
- Otherwise, it may result in electric shock or fire.

Ensure that children do not hang onto the product or climb up onto the product.

- The product may fall and cause personal injury or death.

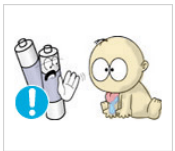
If you do not use the product for a long period of time, disconnect the power cord from the power outlet.

- Otherwise, this may result in overheating or fire due to dust, and may result in fire due to electric shock or leakage.



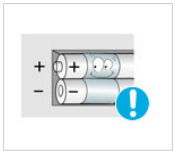
Do not place any heavy items or toys or confectionery, such as cookies etc. that may attract the attention of children and to the product.

- Your children may hang onto the product causing it to fall and this may result in personal injury or death.



Be careful that children do not place the battery in their mouths when removed from the remote control. Place the battery in a location that children or infants cannot reach.

- If children have had the battery in their mouths, consult your doctor immediately.



When replacing the battery, insert it with the right polarity (+, -).

- Otherwise, the battery may become damaged or it may cause fire, personal injury or damage due to leakage of the internal liquid.

Use only the specified standardized batteries, and do not use a new battery and a used battery at the same time.

- Otherwise, the batteries may be damaged or cause fire, personal injury or damage due to a leakage of the internal liquid.

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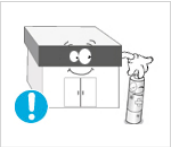


The batteries (and rechargeable batteries) are not ordinary refuse and must be returned for recycling purposes. The customer is responsible for returning the used or rechargeable batteries for recycling.

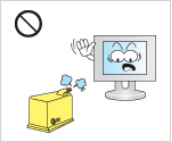
- The customer can return used or rechargeable batteries to a nearby public recycling center or to a store selling the same type of the battery or rechargeable battery.

Do not place the product in a location exposed to direct sunlight or near any heat such as a fire or heater.

- This may reduce the lifetime of the product, and may result in fire.

Do not drop any objects onto the product or cause any impact to the product.

- Otherwise, this may result in electric shock or fire.

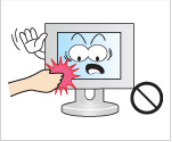


Do not use a humidifier near the product.

- Otherwise, this may result in electric shock or fire.

When there is a gas leak, do not touch the product or the power plug; ventilate immediately.

- If a spark occurs, it may cause an explosion or fire.



If the product has been turned on for a long time, the display panel becomes hot. Do not touch it.

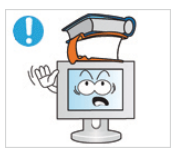
- Keep the small accessories in a location out of the reach of children.

Be careful when adjusting the angle of the product or the height of the stand.

- This may result in personal injury as your hand or fingers may become caught.
- Also, if you tilt the product too far, it may fall and cause personal injury.

Do not install the product in a location low enough for children to reach.

- Otherwise, it may fall and result in personal injury.
- Since the front part of the product is heavy, install the product on a level and stable surface.



Do not put any heavy objects on the product.

- This may result in personal injury and/or damage to the product.

Good Postures When Using the Monitor

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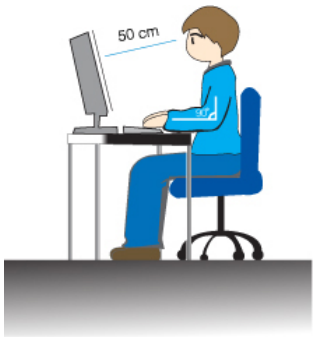

Maintain the correct posture when using this product.

- Straighten your back.
- Keep a distance of 45~50 cm(18~ 20inches) from your eyes to the screen. Look down at the screen and face the screen forwards.
- Maintain the correct posture when using this product.
- Adjust the angle of the product so that light is not reflected onto the screen.
- Keep your elbow at a right angle and keep your arm level with the back of your hand.
- Keep your elbow at a right angle.
- Place your heels flat on the ground while keeping your knees at an angle of 90 degrees or higher and maintain the position of your arm so that your arm is below your heart.

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Introduction

Package Contents

Note

Please make sure the items below are included with your LCD Display.

If any items are missing, contact your dealer.

Contact a local dealer to buy items that are sold separately.

Unpacking

LCD Display

Manuals

Quick Setup Guide

Warranty Card

(Not available in all locations)

MagicInfo Software DVD / User manual

Cables

Power Cord

D-Sub Cable

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Others

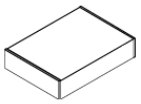
Remote Control

Batteries (AAA X 2)

(Not available in all locations)

Ferrite Core for LAN cable

Sold separately - Not included with the monitor.



Wall Mount KIT

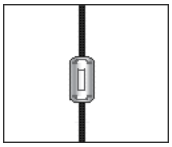
LAN Cable

USB Cable

HDMI Cable

RS232C Cable

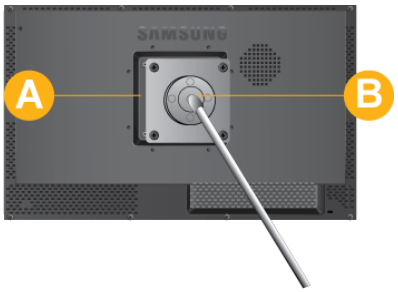
Ferrite Core



- The ferrite cores are used to shield the cables from interference.
- When connecting a cable, open the ferrite core and clip it around the cable near the plug.

Installing a Wall Mount

This product is compatible with a 100 mm x 100 mm VESA compliant wall mount.



Above: A 100 mm x 100 mm VESA compliant wall mount.

A. Wall Mount Base

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B. Wall Mount Kit (Optional)

To attach a wall mount to your monitor, follow these steps:

1. Turn the product off, and then unplug the power cord from the wall outlet.
2. Place a soft cloth or cushion on a flat surface to protect the panel and place the product face down.
3. Remove the stand as described previously.
4. Align the groove of the Monitor's wall mount base with the groove in the wall mount kit and firmly fix the wall mount kit by fastening the screws.

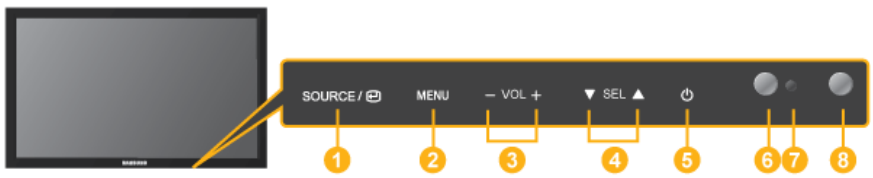
Note

- If you use a screw that is longer than the standard specifications, the inside of the product may be damaged.
- For wall mounts that are not compatible with the standard VESA specifications, the length of the screw may differ depending on the corresponding specifications.
- Do not use screws that are incompatible with the standard VESA specifications and do not screw them in using excessive force.

  This may result in damage to the product or injury due to the product falling. Samsung shall not be held liable for any damage or injury.
- Samsung shall not be held liable for any damage to the product or injury caused by using a wall mount that is not compatible with the specified specifications or due to an installation not performed by an authorized installation engineer.
- When installing the product using a wall mount, purchase a wall mount that provides at least 4 inches (10 cm) of clearance from the wall.
- Samsung shall not be held liable for any problems caused by using a stand that is not compatible with the specified specifications.
- Use a wall mount according to specifications of your country.

Your LCD Display

Front



1 *SOURCE/[⏎] button*

When the OSD menu is not on the screen, switches from PC mode to Video mode. Selects the input source that an external device is connected to in the order below:

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[PC] → **[HDMI]** → **[MagicInfo]**

When the OSD Menu is displayed, activates a highlighted menu item.

2 *MENU button [MENU]*

Opens the on-screen menu and exits from the menu. Also use to exit the OSD menu or return to the previous menu.

3 *- VOL +*

Moves from one menu item to another horizontally or adjusts selected menu values. When OSD is not on the screen, press the button to adjust volume.

4 *▼ SEL ▲*

Moves from one menu item to another vertically or adjusts selected menu values.

5 *Power button [⏻]*

Use this button to turn your LCD Display on and off.

6 *Brightness Sensor*
Automatically detects the ambient brightness and adjusts the brightness of the monitor accordingly.

7 *Power indicator*

Shows PowerSaver mode by blinking green

Note

See PowerSaver described in the manual for further information regarding power saving functions. For energy conservation, turn your LCD Display OFF when it is not needed or when leaving it unattended for long periods.

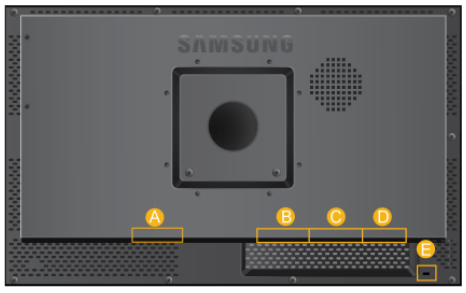
8 *Remote Control Sensor*

Aim the remote control towards this spot on the LCD Display.

Rear

Note

For detailed information concerning cable connections, refer to Connecting Cables under Setup. The LCD Display 's configuration at the back may vary slightly depending on the model.



A

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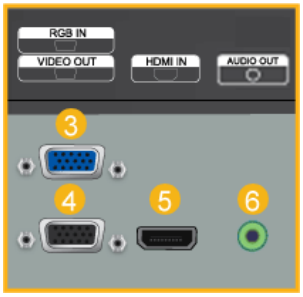
1 *POWER S/W ON [|] / OFF [O]*

Switches the LCD Display On/Off.

2 *POWER*

The power cord plugs into the LCD Display and the wall outlet.

B



3 *RGB IN*

Connect the RGB IN terminal at the back of your product to your computer.

4 *VIDEO OUT*

Connect the [VIDEO OUT] port on the product and the D-Sub port on your monitor using a D-Sub cable.

5 *HDMI IN*

Connect the HDMI terminal at the back of your LCD Display to the HDMI terminal of your digital output device using a HDMI cable.

6 *AUDIO OUT*

Headphone/External speaker output terminal.

C

7 *LAN*

LAN Connection Terminal

8

USB Keyboard / Mouse, Mass Storage Device Compatible.

D

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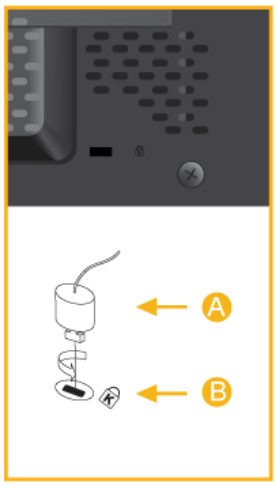
9 *AUDIO IN*

Connect the audio cable for your product to the audio port on the back of your computer.

10 *RS232C IN*

MDC(Multiple Display Control) Program Port

E



Kensington Lock Slot

A Kensington Lock is a device used to physically fix your monitor when you use it in a public place. The locking device has to be purchased separately. The appearance and locking method may differ from the illustration depending on the manufacturer. Refer to the manual provided with the Kensington Lock for proper use. The locking device has to be purchased separately.

Note

The location of the Kensington Lock slot may be different depending on the model.

Using the Anti-Theft Kensington Lock

1. Insert the locking device into the Kensington slot on the Monitor B and turn it in the locking direction A.
2. Connect the Kensington Lock cable.
3. Fix the Kensington Lock to a desk or a heavy stationary object.

Note

See Connecting Cables for further information regarding cable connections.

Remote Control

Note

The performance of the remote control may be affected by a TV or other electronic device operating near the LCD Display due to interference with the remote's operating frequency.

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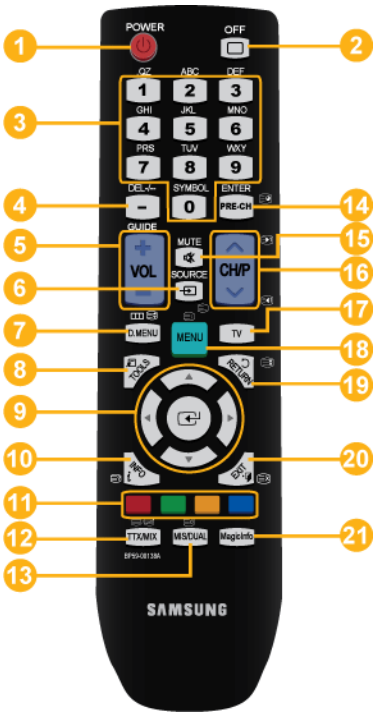

1. POWER
2. OFF
3. Number Buttons
4. DEL -/-- / GUIDE button
5. + VOL -
6. SOURCE
7. D.MENU
8. TOOLS
9. Up-Down Left-Right buttons
10. INFO
11. COLOR BUTTONS
12. TTX/MIX
13. MTS/DUAL
14. ENTER/PRE-CH
15. MUTE
16. CH/P
17. TV
18. MENU
19. RETURN
20. EXIT
21. MagicInfo

1. POWER	Turns the product On.
2. OFF	Turns the product Off.
3. Number Buttons	Used to enter the password during the OSD adjustment or to use **MagicInfo**.
4. DEL -/-- / GUIDE button	The "-" button is used to select Digital channels. Electronic Program Guide (EPG) display. * This function does not work for this LCD Display.
5. + VOL -	Adjusts the audio volume.
6. SOURCE	Press this button to change the input signal SOURCE. You can only change to sources that have external devices connected them.
7. D.MENU	DTV menu display * This function does not work for this LCD Display.

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8. TOOLS

Use to quickly select frequently used functions.

* This function does not work for this LCD Display.

9. Up-Down Left-Right buttons

Moves from one menu item to another horizontally or vertically, or adjusts selected menu values.

10. INFO

Displays current picture information on the upper left corner of the screen.

11. COLOR BUTTONS

Press to add or delete channels and to store channels to the favorites channel list in the “Channel List” menu.

* This function does not work for this LCD Display.

12. TTX/MIX

TV channels provide written information services via teletext.

- Teletext Buttons

* This function does not work for this LCD Display.

13. MTS/DUAL

* This function does not work for this LCD Display.

MTS-

You can select MTS (Multichannel Television Stereo) mode.

	Audio Type	MTS/S_Mode	Default
FM Stereo	Mono	Mono	Manual Change
	Stereo	Mono ↔ Stereo	
	SAP	Mono ↔ SAP	Mono

DUAL-

STEREO/MONO, DUAL I / DUAL II and MONO/NICAM MONO/NICAM STEREO can be operated depending on the broadcasting type by using the DUAL button on the remote control while watching TV.

14. ENTER/PRE-CH

This button is used to return to the immediately previous channel.

* This function does not work for this LCD Display.

15. MUTE

Pauses (mutes) the audio output temporarily. The audio comes back on if MUTE or - VOL + is pressed in the Mute mode.

16. CH/P

In **TV** mode, selects TV channels.

* This function does not work for this LCD Display.

17. TV

Selects the TV mode directly.

* This function does not work for this LCD Display.

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18. MENU	Opens the on-screen menu and exits from the menu or closes the adjustment menu.
19. RETURN	Returns to the previous menu.
20. EXIT	Exits from the menu screen.
21. MagicInfo	MagicInfo Quick Launch Button.

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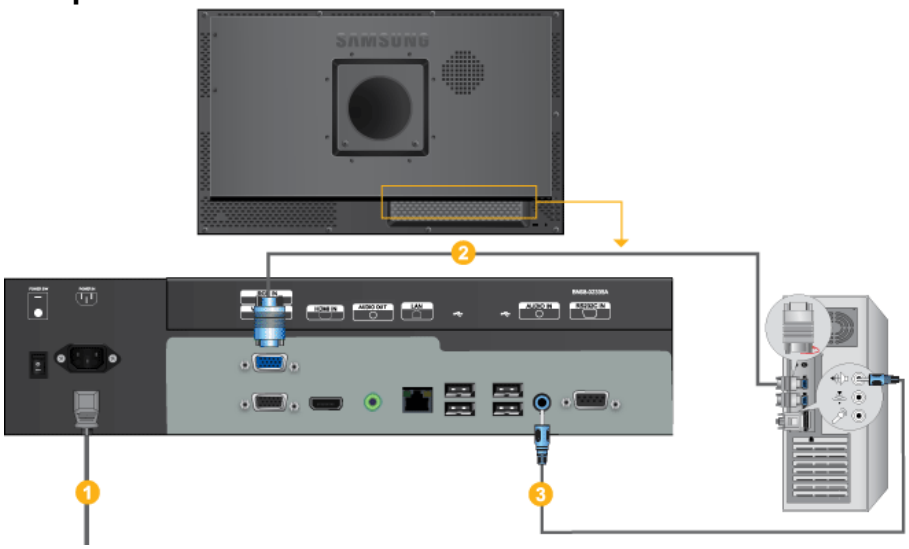
Connections

Connecting a Computer



1. Connect the power cord for your LCD Display to the power port on the back of the LCD Display. Turn the power switch on the back of the LCD Display on.
2. Connect the D-sub cable the 15-pin, RGB port on the back of your LCD Display and the 15 pin D-sub Port on the computer.

3. Connect the audio cable for your LCD Display to the audio port on the back of your computer.

Notes

- Turn on both your computer and the LCD Display.
- Contact a local SAMSUNG Electronics Service Center to buy optional items.

Connecting to Other Devices

Note

You can connect AV output devices such as DVD players, VCRs, or camcorders as well as your computer to the LCD Display. For detailed information on connecting AV output devices, refer to the contents under Adjusting Your LCD Display.

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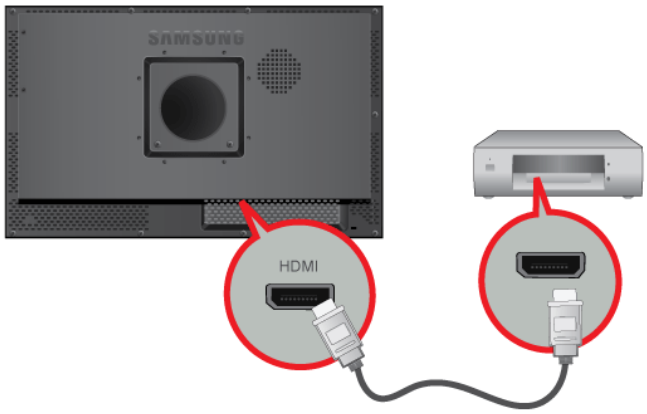
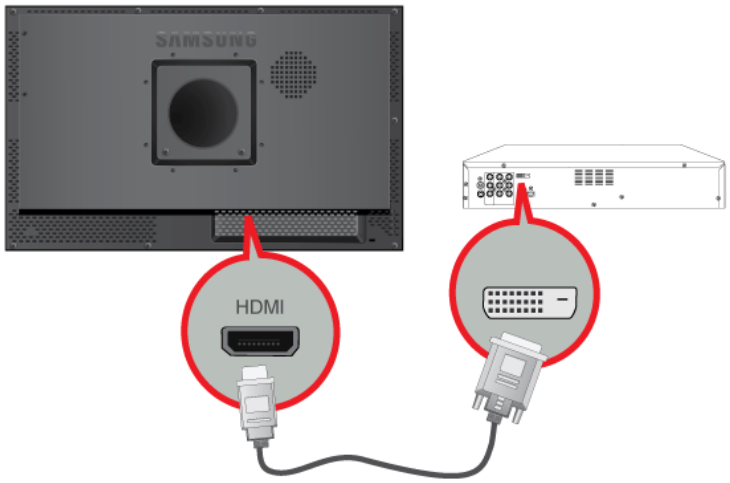
Connecting a HDMI Cable



Notes

- Connect input devices such as a Blu-Ray/DVD player to the HDMI IN terminal of the LCD Display using an HDMI cable.
- You cannot connect a PC to the HDMI terminal.

Connecting a DVI to HDMI Cable



Notes

- Connect the DVI output terminal of a digital output device to the HDMI terminal of the LCD Display using a DVI to HDMI cable.
- Connect the red and white plugs of an RCA to stereo mini-plug cable (for PC) to the red and white audio output terminals of the digital output device. Connect the mini-plug side of the cable to the to the AUDIO IN terminal of the LCD Display.

Connecting to another Monitor

Connect a D-Sub cable between the [VIDEO OUT] port on the product and the D-Sub in port on the other monitor.

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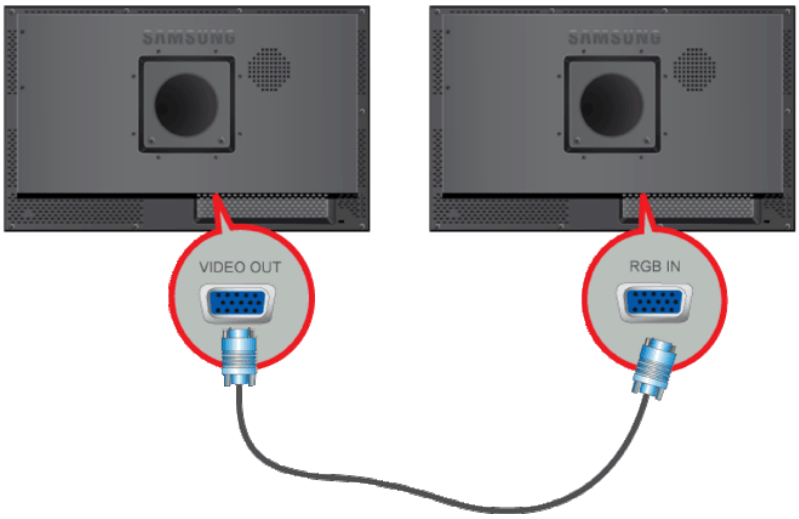
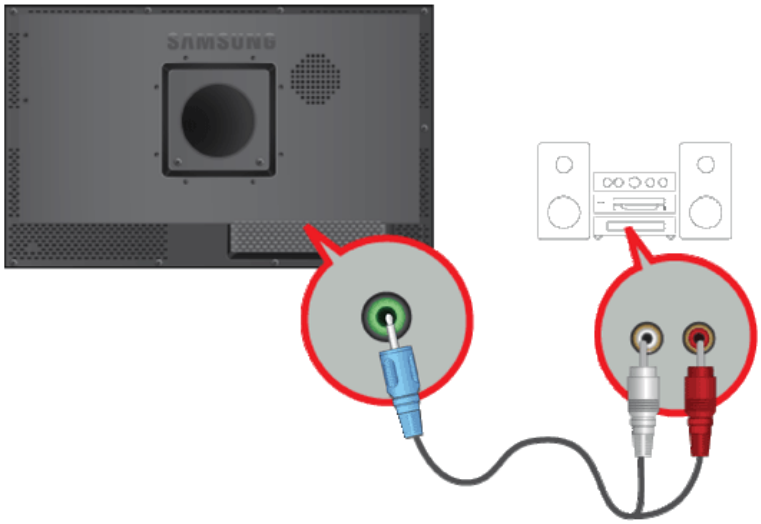


Note

- Connect to the [VIDEO OUT] port to display the same picture on another monitor.

  (For presentation purposes)

Connecting to an Audio System



Note

- Connect a set of audio cables between the AUX L, R jacks on the AUDIO SYSTEM and [AUDIO OUT] on LCD Display.

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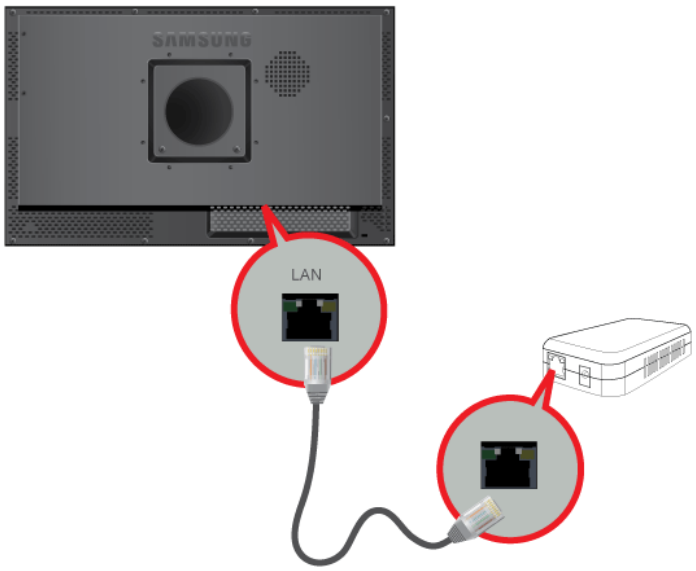
Connecting a LAN Cable

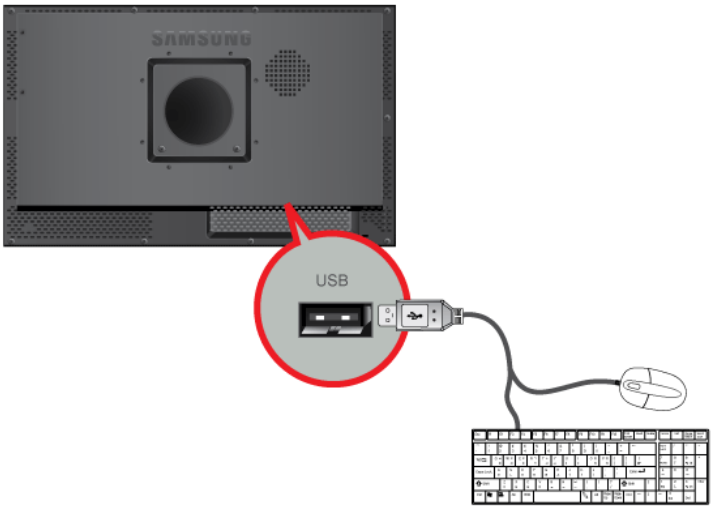


Note

Connect the LAN cable.

Connecting a USB device

You can connect USB devices such as a mouse or keyboard.



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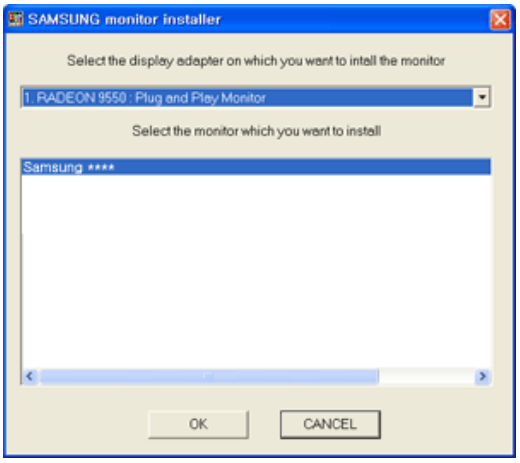
Using the Software

Monitor Driver

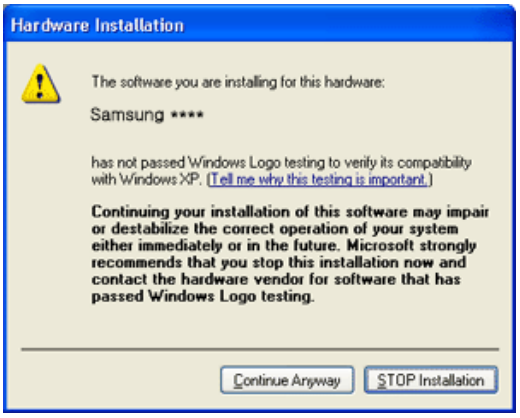
> **Note**
>
> When prompted by the operating system for the monitor driver, insert the CD-ROM included with this monitor. Driver installation is slightly different from one operating system to another. Follow the directions appropriate for the operating system you have.
>
> If you have lost or misplaced the CD, you can download the monitor driver by clicking Support > Downloads at http://www.samsung.com/, and then following the directions on the web site After you have downloaded the file, double click the file, and then follow the directions that appear on your screen.

Installing the Monitor Driver Automatically - All Windows Operating Systems

1. Insert the CD into the CD-ROM drive.
2. Click "Windows".
3. Choose your monitor model from the model list, and then click the "OK" button.


SAMSUNG monitor installer
Select the display adapter on which you want to intall the monitor
1. RADEON 9550 : Plug and Play Monitor
Select the monitor which you want to install
Samsung ****
OK
CANCEL

4. If you have Windows XP or Windows 2000 and you see the following message window, click the "Continue Anyway" button. On the next window, click the "OK" button.


Hardware Installation
The software you are installing for this hardware:
Samsung ****
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

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Note

This monitor driver is certified by Microsoft, and installing it will not damage your system.

If you see the window above, you may have an older install disk. To get the certified driver, please access the download page for your monitor.

To access the download page, go to http://www.samsung.com/, click Support, and then Downloads.

Installing the Monitor Driver Manually

Microsoft® Windows Vista™ Operating System

1. Insert your CD into your CD-ROM drive.
2. Click Start > "Control Panel". Then, double-click on "Appearance and Personalization".

3. Click "Personalization", and then "Display Settings".

4. Click "Advanced Settings...".

5. Click "Properties" in the "Monitor" tab. If the "Properties" button is deactivated, it means the configuration for your monitor is completed. The monitor can be used as is.

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If the message "Windows needs..." is displayed, as shown in the figure below, click "Continue".

Generic PnP Monitor and NVIDIA GeForce 6600 LE (Microsoft Co...
Adapter
Monitor
Troubleshoot
Color Management
Monitor Type
Generic PnP Monitor
Properties
Monitor Settings
Screen refresh rate:
60 Hertz
Hide modes that this monitor cannot display
Clearing this check box allows you to select display modes that this monitor cannot display correctly. This may lead to an unusable display and/or damaged hardware.
OK
Cancel
Apply

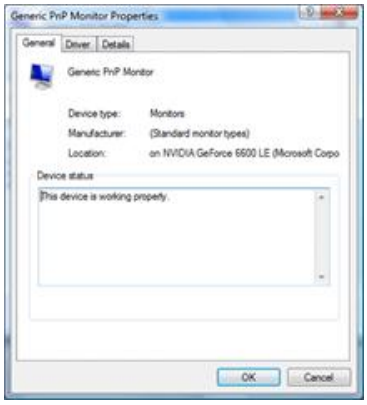
Note

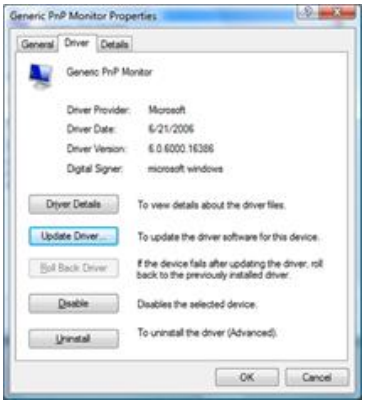
This monitor driver is certified by Microsoft, and installing it will not damage your system.

If you see the window above, you may have an older install disk. To get the certified driver, please access the download page for your monitor.

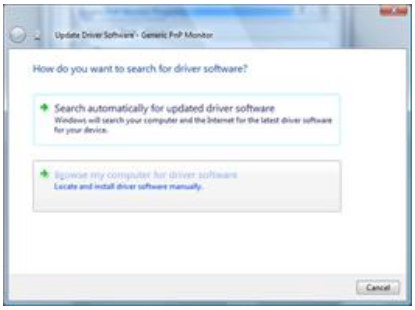
To access the download page, go to http://www.samsung.com/, click Support, and then Downloads.

6. Click "Update Driver..." in the "Driver" tab.





7. Check the "Browse my computer for driver software" checkbox, and then click "Let me pick from a list of device drivers on my computer".


How do you want to search for driver software?
Search automatically for updated driver software
Browse my computer for driver software
Locate and install driver software manually.
Cancel

Browse for driver software on your computer
Browse...
Include subfolders
Let me pick from a list of device drivers on my computer
Next
Cancel

8. Click "Have Disk..." and select the CD or DVD drive (for example, D:\) where the driver setup file is located, and then click "OK".

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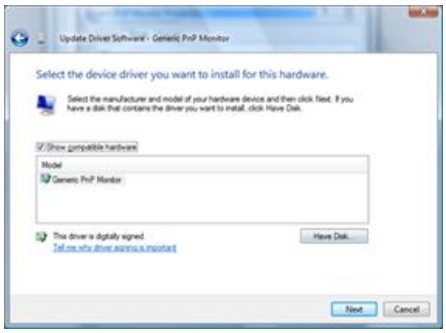
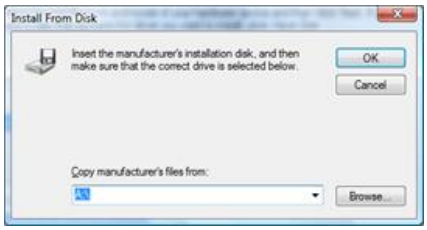
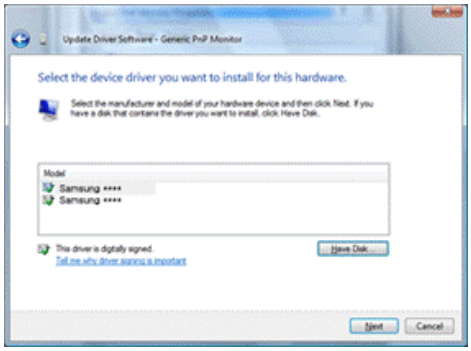
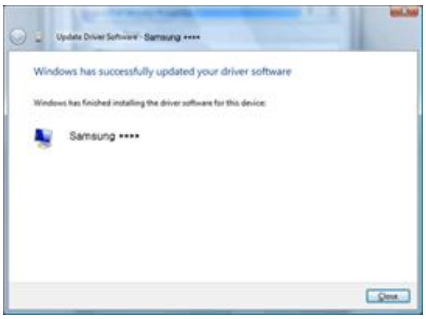

Update Driver Software - Generic PnP Monitor
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Show compatible hardware
Model
Generic PnP Monitor
This driver is digitally signed.
Tell me why driver signing is important
Have Disk...
Next
Cancel

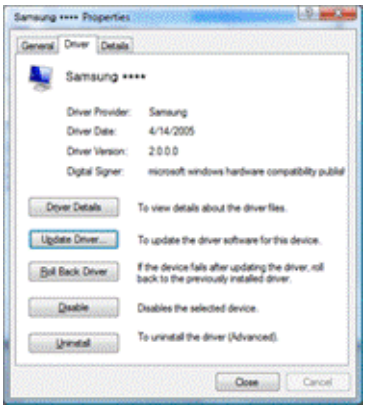

Install From Disk
Insert the manufacturer's installation disk, and then make sure that the correct drive is selected below.
OK
Cancel
Copy manufacturer's files from:
Browse...

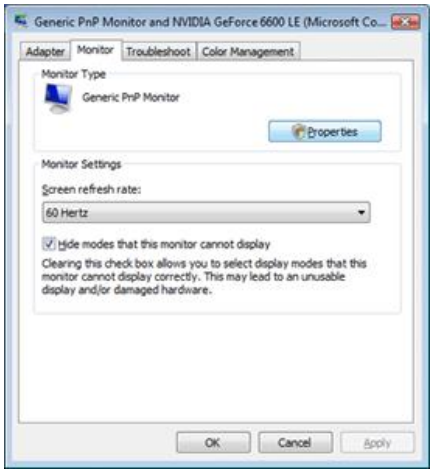
9. Select the model that matches your monitor from the list of monitor models on the screen, and click "Next".

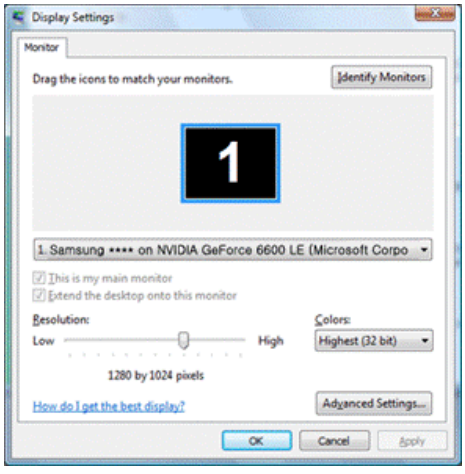

Update Driver Software - Generic PnP Monitor
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Model
Samsung ****
Samsung ****
This driver is digitally signed.
Tell me why driver signing is important
Have Disk...
Next
Cancel

10. Click "Close" → "Close" → "OK" → "OK" on the following screens displayed in sequence.


Update Driver Software - Samsung ****
Windows has successfully updated your driver software
Windows has finished installing the driver software for this device:
Samsung ****
Close




Generic PnP Monitor and NVIDIA GeForce 6600 LE (Microsoft Co...
Adapter
Monitor
Troubleshoot
Color Management
Monitor Type
Generic PnP Monitor
Properties
Monitor Settings
Screen refresh rate:
60 Hertz
Hide modes that this monitor cannot display
Clearing this check box allows you to select display modes that this monitor cannot display correctly. This may lead to an unusable display and/or damaged hardware.
OK
Cancel
Apply



Microsoft® Windows® XP Operating System

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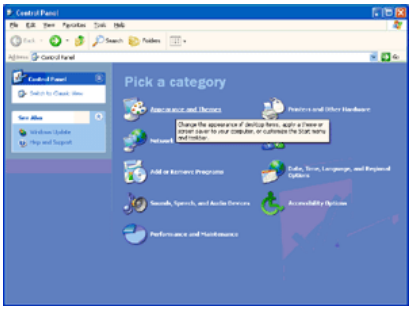
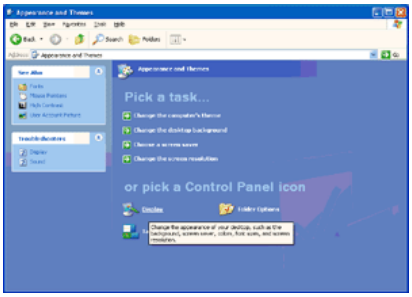
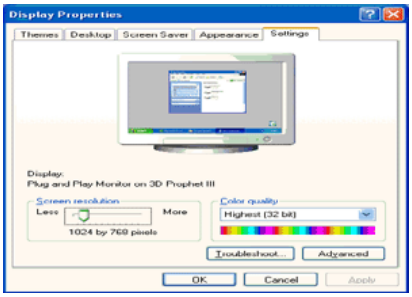
1. Insert the CD the CD-ROM drive.

2. Click Start > Control Panel, and then click the Appearance and Themes icon.

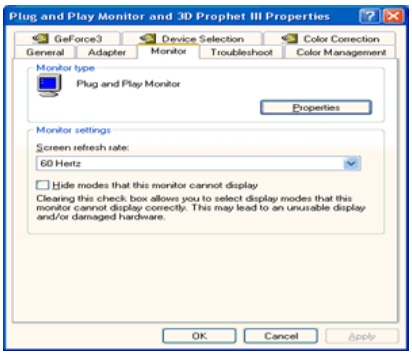


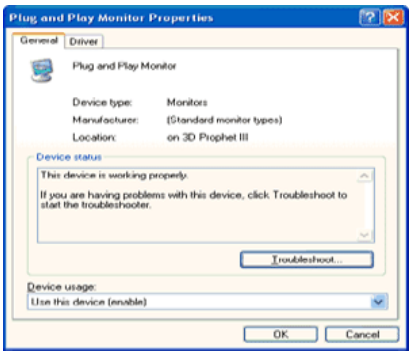
3. Click the "Display" icon and choose the "Settings" tab, and then click "Advanced...".



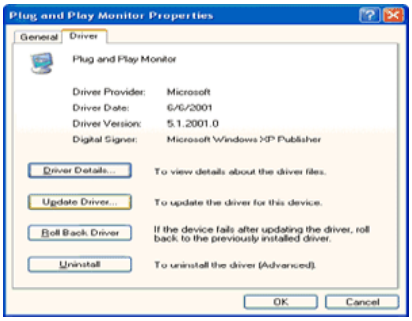


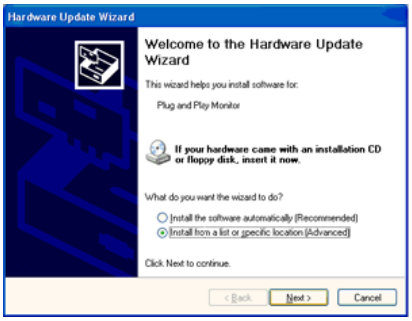
4. Click the "Properties" button on the "Monitor" tab, and then select "Driver" tab.





5. Click "Update Driver..." and, select "Install from a list or...", and then click the "Next" button.




Hardware Update Wizard
Welcome to the Hardware Update Wizard
This wizard helps you install software for:
Plug and Play Monitor
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

6. Select "Don't search, I will...", click "Next", and then click "Have disk".

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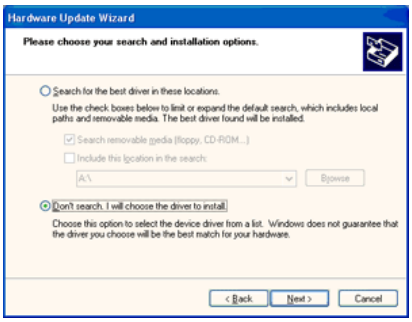
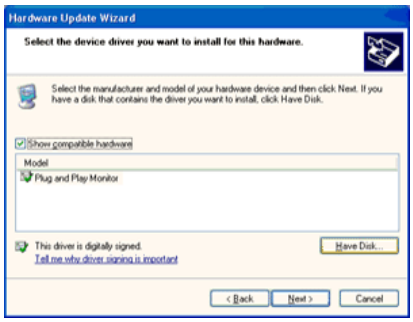
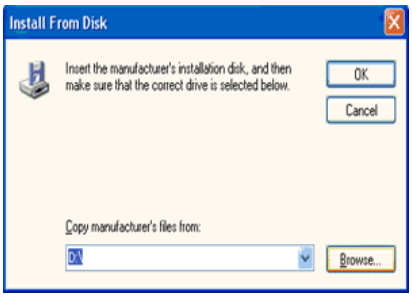
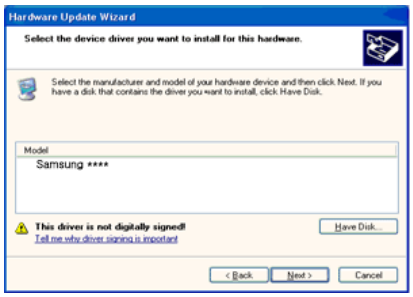

Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
A:\
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel


Hardware Update Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Show compatible hardware
Model
Plug and Play Monitor
This driver is digitally signed.
Tell me why driver signing is important
Have Disk...
< Back
Next >
Cancel

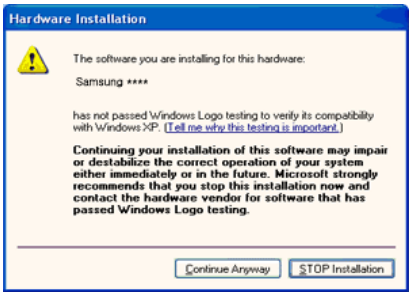
7. Click the "Browse" button, and then choose the driver disk location (for example, D:\).

   Choose your monitor model in the model list, and then click the "Next" button.




Hardware Update Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Model
Samsung ****
This driver is not digitally signed!
Tell me why driver signing is important
Have Disk...
< Back
Next >
Cancel

8. If you see can see following message window, click the "Continue Anyway" button. Then click "OK" button.


Hardware Installation
The software you are installing for this hardware:
Samsung ****
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

Note

This monitor driver is certified by Microsoft, and installing it will not damage your system.

If you see the window above, you may have an older install disk. To get the certified driver, please access the download page for your monitor.

To access the download page, go to http://www.samsung.com/, click Support, and then Downloads.

9. Click the "Close" button, then click the "OK" button continually.

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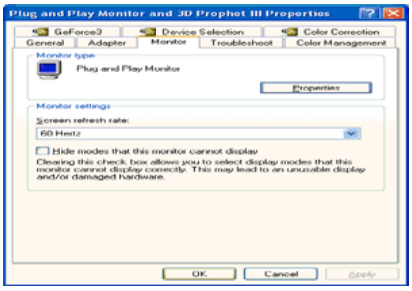

10. Monitor driver installation is completed.

Microsoft® Windows® 2000 Operating System

If you can see "Digital Signature Not Found" on your monitor, follow these steps.

1. Choose the "OK" button on the "Insert disk" window.
2. Click the "Browse" button on the "File Needed" window.
3. Choose A:(D:\Driver), click the "Open" button, and then click the "OK" button.

How to install

1. Click Start > Setting > Control Panel.
2. Double click the "Display" icon.
3. Select the "Settings" tab, and then click the "Advanced Properties" button.
4. Choose "Monitor".

   Case1 : If the "Properties" button is inactive, it means your monitor is properly configured. Please stop installation.

   Case2 : If the "Properties" button is active, click the "Properties" button, and then follow the next steps.

5. Click "Driver", click on "Update Driver...", and then click on the "Next" button.
6. Choose "Display a list of the known drivers for this device so that I can choose a specific driver" , click "Next", and then click "Have disk".
7. Click the "Browse" button, and then choose A:(D:\Driver).
8. Click the "Open" button, and then click "OK" button.
9. Choose your monitor model, and then click the "Next" button. Then, click "Next" button.
10. Click the "Finish" button, and then the "Close" button.

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If you can see the "Digital Signature Not Found" window, Then click the "Yes" button. Then click the "Finish" button and the "Close" button.

Microsoft® Windows® Millennium Operating System

1. Click Start>Setting>Control Panel.
2. Double click the "Display" icon.
3. Select the "Settings" tab, and then click the "Advanced Properties" button.
4. Select the "Monitor" tab.
5. Click the "Change" button in the "Monitor Type" area.
6. Choose "Specify the location of the driver".
7. Choose "Display a list of all the drivers in a specific location...", and then click "Next" button.
8. Click the "Have Disk" button.
9. Specify A:\(D:\driver), and then click the "OK" button.
10. Select "Show all devices" and choose the monitor that corresponds to the one you connected to your computer, and then click "OK".
11. Continue choosing the "Close" button and the "OK" button until you close the Display Properties dialogue box.

Microsoft® Windows® NT Operating System

1. Click Start>Setting>Control Panel, and then double-click "Display" icon.
2. In the Display Registration Information window, click Settings Tab, and then click "All Display Modes".
3. Select a mode that you wish to use (Resolution, Number of colors, and Vertical frequency) and then click "OK".
4. Click "Test". If you see the screen working normally, click the “Apply” button. If the screen is not normal, change to a different mode (lower mode of resolution, colors, or frequency).

Note

If there is no Mode at All Display Modes, select the level of resolution and vertical frequency by referring to the Preset Timing Modes in the user guide.

Linux Operating System

To execute X-Window, you need to make the X86Config file, which is a type of system setting file.

1. Press "Enter" at the first and the second screen after executing the X86Config file.
2. The third screen is for setting your mouse.
3. Set a mouse for your computer.
4. The next screen is for selecting a keyboard.

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5. Set a Keyboard for your computer.
6. The next screen is for setting your monitor.
7. Set a horizontal frequency for your monitor. (You can enter the frequency directly.)
8. Set a vertical frequency for your monitor. (You can enter the frequency directly.)
9. Enter the model name of your monitor. This information will not affect the actual execution of X-Window.
10. You have finished setting up your monitor. Execute X-Window after setting other requested hardware.

MDC (Multi-Display Channel)

Installation

1. Insert the installation CD into the CD-ROM drive.
2. Click the MDC installation file.

   Note

   If the installation window does not appear, access the CD using Windows Explorer, and then double click the MDC executable file on the CD to launch the installation.
3. When the Installation Shield Wizard window appears, click "Next".
4. Select "I agree to the terms of the license agreement" to accept the terms of use.
5. Click "Install".
6. The "Installation Status" window appears.
7. Click "Finish".
8. When the installation is complete, the MDC executable icon appears on your desktop. Double-click the icon to start the program.

The MDC execution icon may not appear depending on the specifications of your computer system or monitor. If this happens, press the F5 Key.

Installation Problems

The installation of MDC can be affected by such factors as the video card, motherboard and the network environment.

Uninstall

To uninstall the MDC program, use the "Add or Remove Programs" option in the Windows® Control Panel.

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Uninstall

To uninstall the MDC program, use the "Add or Remove Programs" option in the Windows® Control Panel.

To uninstall MDC, follow these steps:

1. Select "Setting/Control Panel" on the "Start" menu, and then double-click "Add/Delete a program".

2. Select MDC from the program list, and then click the "Add/Delete" button.

■ Using MDC

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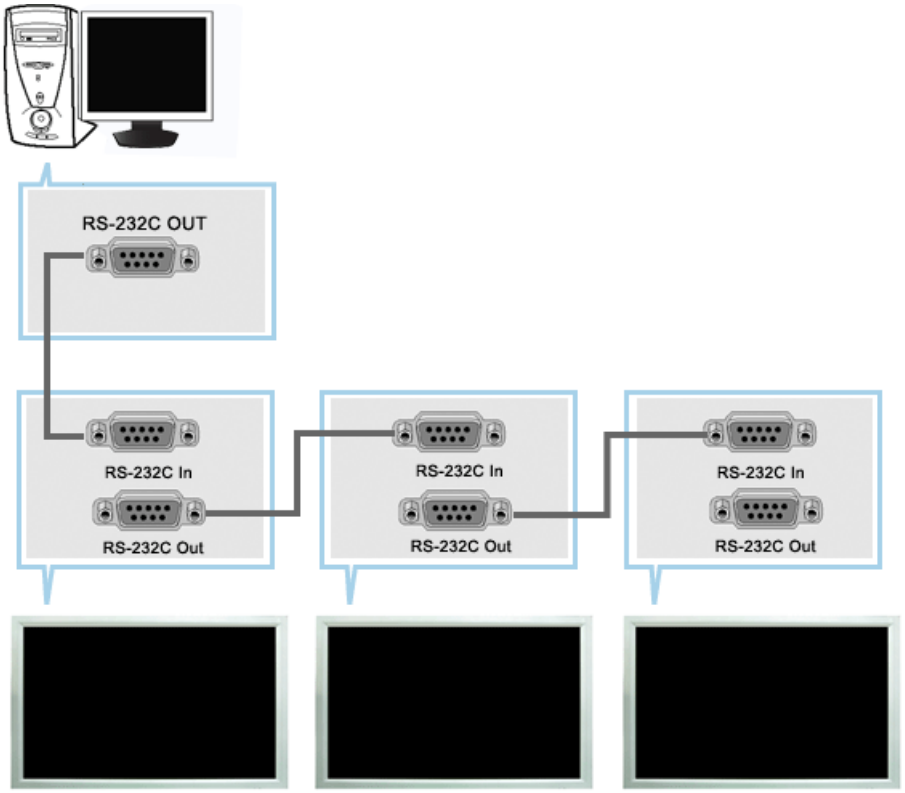
Multiple Display Control

MDC System

Introduction



A Multiple Display Control (MDC) is an application allowing various displays to be easily and simultaneously operated on a PC. RS-232C, a standard of serial communication, is used for the communication between a PC and a display. Therefore, a serial cable should be connected between the serial port on a PC and the serial port on a display.

Main Screen

Click Start > Program > Samsung > MDC System to start the program.

Select a set to see the volume of the selected set within the slider.

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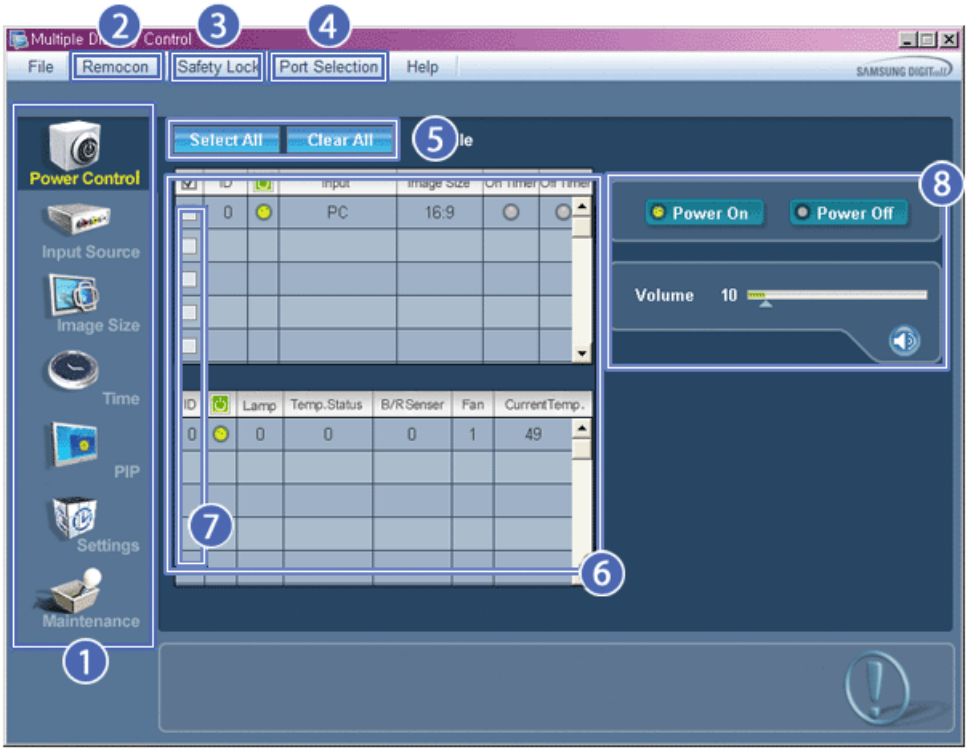

1. Main Icons
2. Remocon
3. Safety Lock
4. Port Selection
5. Select Button
6. Info Grid
7. Display Selection
8. Control Tools

---

1. Use the main icons to switch into each screen.
2. Allows you to enable or disable the remote control signal receiving function of the display unit.
3. Set the Safety Lock function.
   When setting the Lock function, you can only operate power and lock buttons on the remote control and set.
4. The setting for the PC Serial Port can change. The original value is COM1.
5. Click Select all or Clear to select or clear all displays.
6. Use Grid to view brief information on selected display.
7. Select a display from Display Selection.
8. Use Control Tools to control displays.

<Note> The remote control Enable/Disable function operates whether or not the power is On/Off, and this applies to all displays connected to the MDC. However, regardless of the status at the time the MDC is shut down, the remote control signal receiving function of all displays is initialized to Enable when the MDC is closed.

Port Selection

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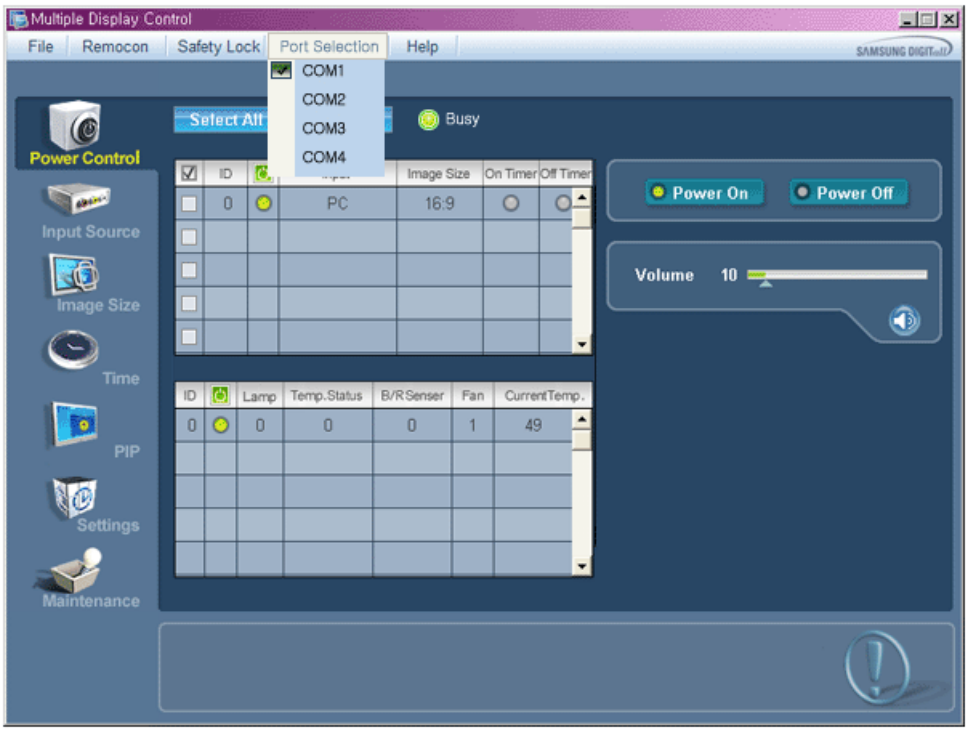

1. The Multiple Display Control is originally set to COM1.
2. If any port other than COM1 is used, COM1 through COM4 can be selected in the Port Selection Menu.
3. If the exact port name that is connected to the LCD Display using a serial cable is not selected, communication will be unavailable.
4. The selected port is stored in the program and used for the next program as well.

Power Control

1. Click Power Control of the main icons and the Power Control screen appears.

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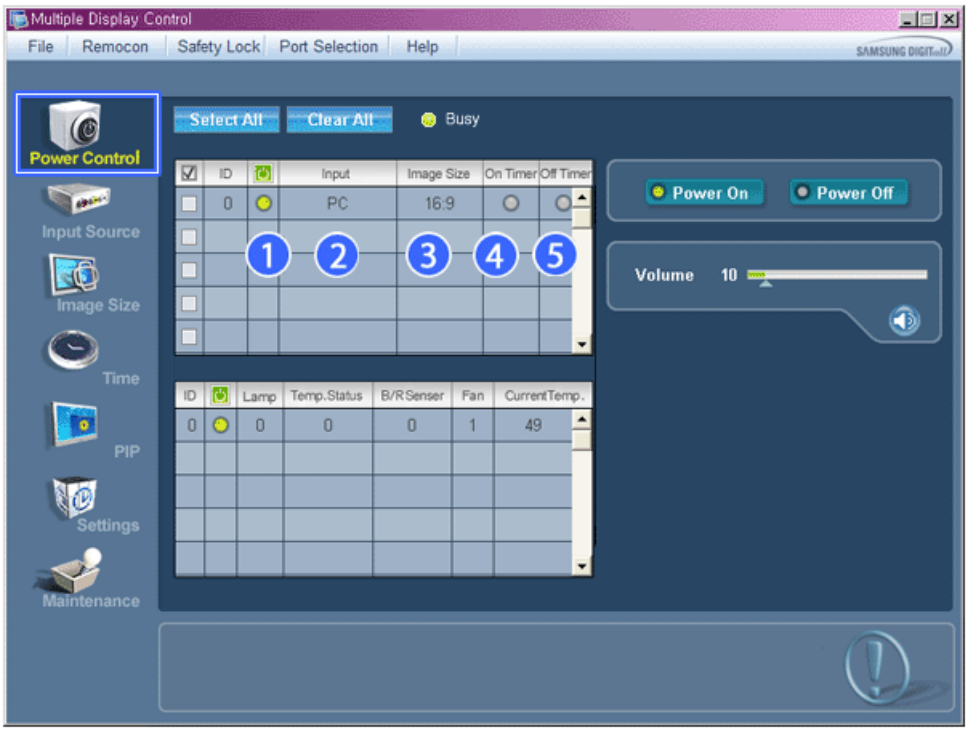

✱ Info Grid shows some basic information necessary to Power Control.

1) (Power Status)
2) Input
3) Image Size
4) On Timer
5) Off Timer

2. Use the Select All button or Check Box to choose a display to control.

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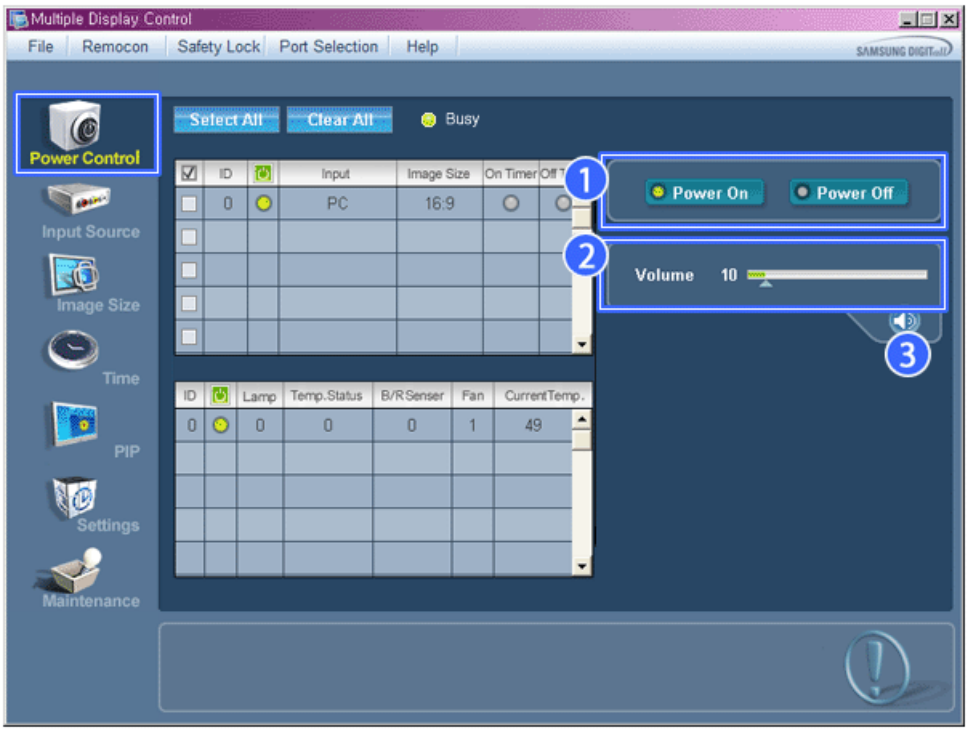

✱ ☑ Power Control allows controlling some of the functions of the selected display.

1) Power On/Off
   - Turns the power of the selected display On/Off.

2) Volume
   - Controls the volume level of the selected display.
     It receives the volume value of the selected display from the sets and displays it in the slider.
     (When you cancel the selection or choose Select All, the value returns to the default value 10)

3) (Mute On/Off)
   - Turns on/off the Mute function of the selected display.
     When selecting one set at a time, turn on the Mute function for the selected set.
     The Mute function is disabled automatically when you adjust the volume level.
     (The values return to the default settings when you undo the selections or choose "Select All".)

✱ **The Power Control feature is available for all displays.**

✱ **The Volume Control and Mute features are available only for the displays whose power status is ON.**

Input Source

1. Click Input Source of the main icons and the Input Source control screen appears.
   Click Select All or use Check Box to select a display to control.

• TV Mode

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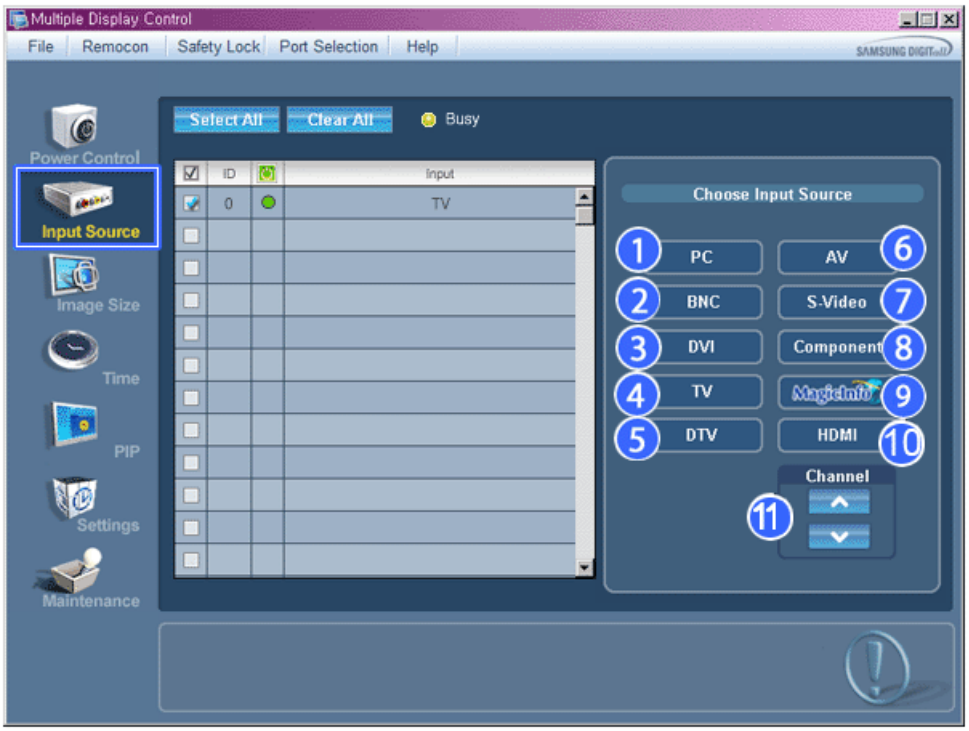
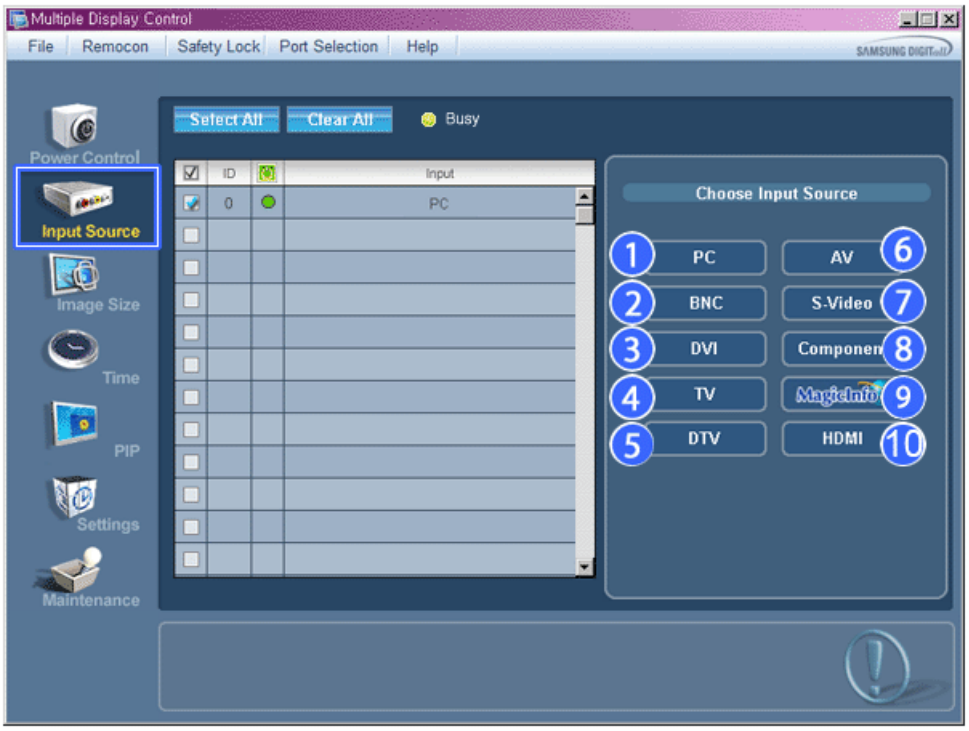


• PC Mode



✱ Info Grid shows some basic information necessary to Input Source Control.

1) PC
   - Changes the Input Source of the selected display to PC.

2) BNC
   - Changes the Input Source of the selected display to BNC.

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3) DVI
- Changes the Input Source of the selected display to DVI.

4) TV
- Changes the Input Source of the selected display to TV.

5) DTV
- Changes the Input Source of the selected display to DTV.

6) AV
- Changes the Input Source of the selected display to AV.

7) S-Video
- Changes the Input Source of the selected display to S-Video.

8) Component
- Changes the Input Source of the selected display to Component.

9) MagicInfo
- The Input source of MagicInfo works only on MagicInfo model.

10) HDMI
- Changes the Input Source of the selected display to HDMI.

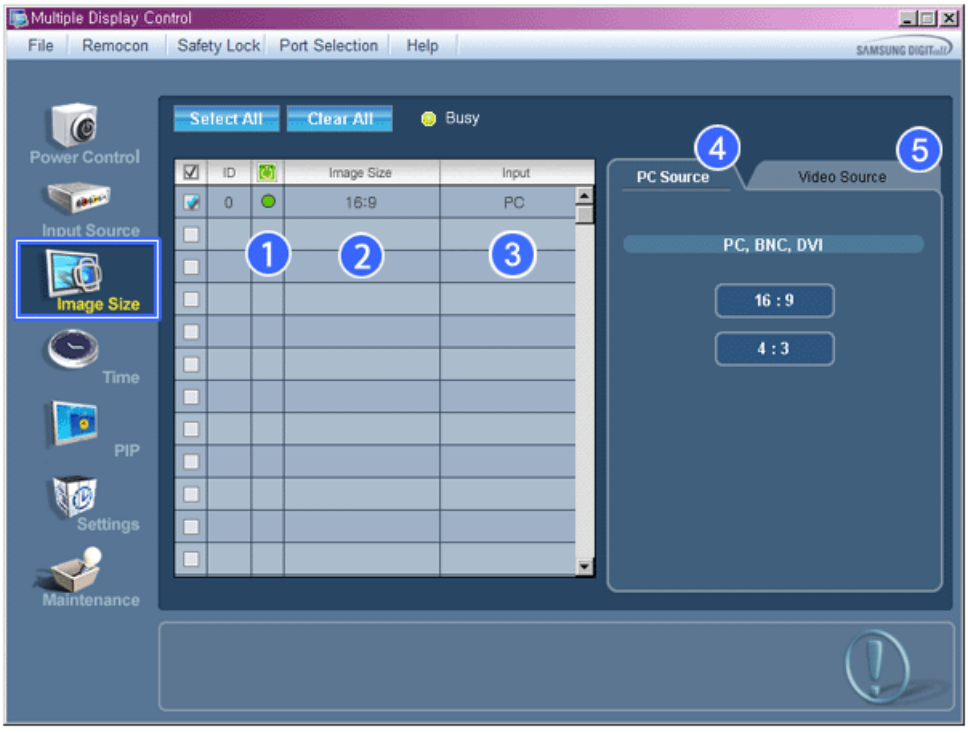
11) Channel
- Channel arrow appears when the Input Source is TV.

* **TV Source can be selected only in products with TV and controlling channels is allowed only when Input Source is TV.**
* **The Input Source Control feature is available only for the displays whose power status is ON.**

Image Size

PC, BNC, DVI

1. Click Image Size of the main icons and the Image Size control screen appears.



* Info Grid shows some basic information necessary to Image Size Control.

1) (Power Status)
- Shows the power status of the current display.

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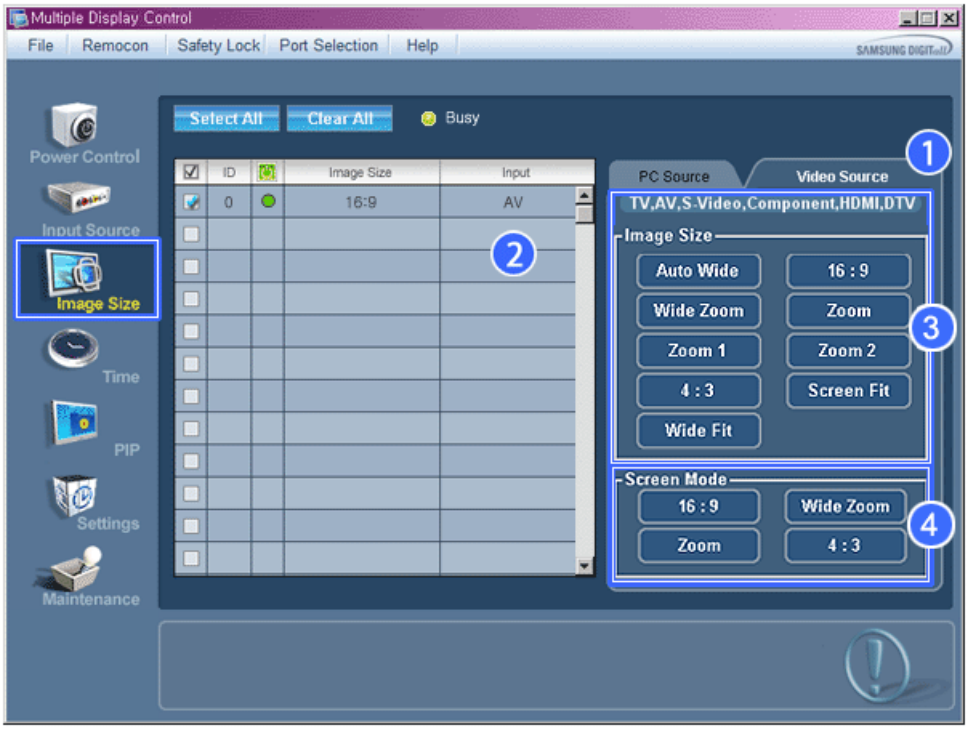
2) Image Size
   - Shows the current Image Size of the display in use.
3) Input
   - Info Grid displays only the displays whose Input Source is PC, BNC, DVI.
4) PC Source
   - When you click Image Size, the PC Source tab first appear.
   - The Image Size Control button controls Image Size available for PC, BNC, DVI.
5) Video Source
   - Click the Video Source tab to control Image Size for respective Input Source.

* **The Input source of MagicInfo works only on MagicInfo model.**
* **The Input source of TV works only on TV model.**
* **Image Size Control is available only for the displays for which power status is ON.**

Image Size

TV, AV, S-Video, Component, DVI(HDCP), HDMI, DTV

1. Click Image Size of the main icons and the Image Size control screen appears.



* Info Grid shows some basic information necessary to Image Size Control.

1) Click the Video Source tab to adjust Image Size for TV, AV, S-Video, Component, DVI(HDCP), HDMI, DTV.
   Click Select All or use Check Box to select a display to control.
2) Info Grid displays only the display having TV, AV, S-Video, Component or DVI(HDCP) as input source.
3) Switch Image Size of the selected display randomly.

   Note: Auto Wide, Zoom1 and Zoom2 are not available for selection when the input signal type for Component and DVI (HDCP) is 720p or 1080i.
   (The Auto Wide mode is available only for TV, AV, and S-Video.)
4) The screen modes can only be adjusted when a TV (PAL only) is connected and the Image Size item is set to Auto Wide.

* **The Input source of MagicInfo works only on MagicInfo model.**
* **The Input source of TV works only on TV model.**
* **The Image Size Control feature is available only for the displays whose power status is ON.**

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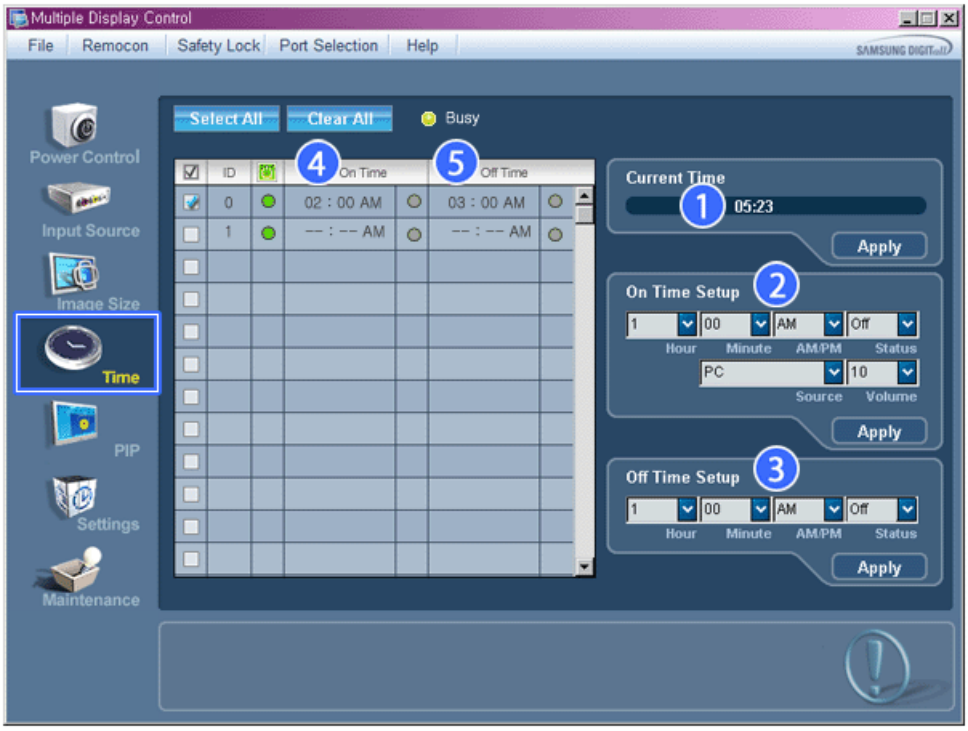
Time

1. Click Time of the main icons and the Time Control screen appears.



✱ Info Grid shows some basic information necessary to Time Control.

1) Current Time
   - Set the current time for the selected display (PC Time).
   - To change the current time, first change the PC Time.
2) On Time Setup
   - Set the Hour, Minute, AM/PM of On Time Setup, Status, Source, Volume of the selected display.
3) Off Time Setup
   - Set the Hour, Minute, and AM/PM, Status for Off Time Setup of the selected display.
4) Shows the On Time settings.
5) Shows the Off Time settings.

✱ **The Input source of MagicInfo works only on MagicInfo model.**
✱ **The Input source of TV works only on TV model.**
✱ **Time Control is available only for the displays for which the power status is ON.**
✱ **At On Time Setup, TV Source functions only for TV Model.**
✱ **At On Time Setup, MagicInfo Source functions only for MagicInfo Model.**

PIP

PIP Size

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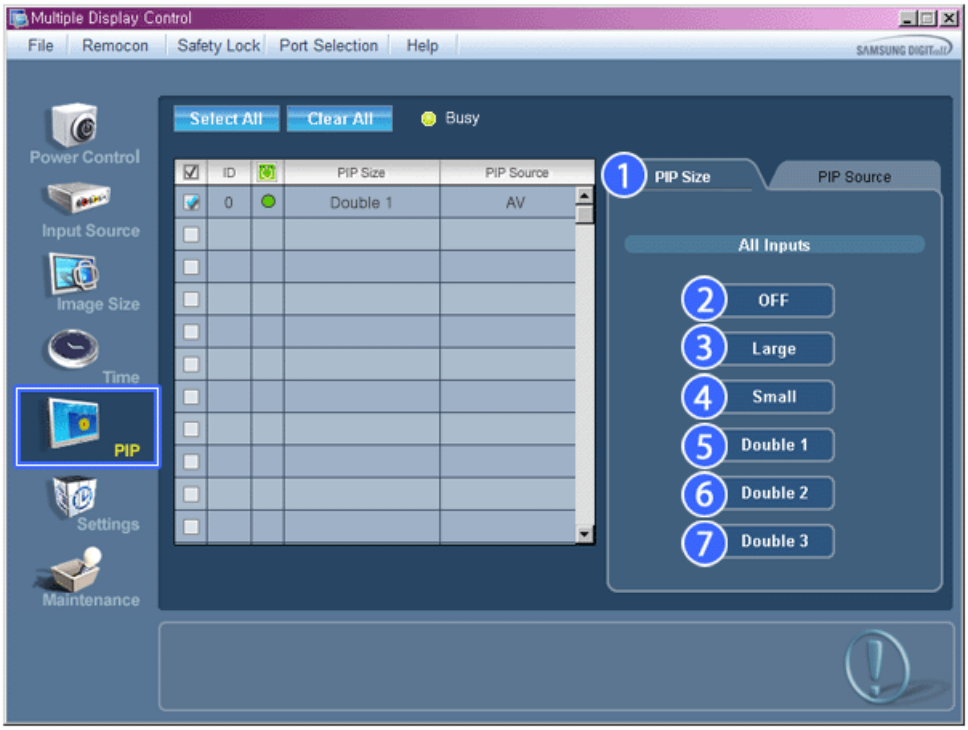
1. Click PIP of the main icons and the PIP control screen appears.
   Click Select All or use Check Box to select a display to control.



✱ Info Grid shows some basic information necessary to PIP Size Control.

1) PIP Size
   - Shows the current PIP Size of the display in use.
2) OFF
   - Turns off the PIP of the selected display.
3) Large
   - Turns on the PIP of the selected display and changes the size to Large.
4) Small
   - Turns on the PIP of the selected display and changes the size to Small.
5) Double 1
   - Turns on the PIP of the selected display and changes the size to Double 1.
6) Double 2
   - Turns on the PIP of the selected display and changes the size to Double 2.
7) Double 3 (Picture By Picture)
   - Turns on the PBP of the selected display and changes the size to Double 3.

✱ **The Input source of MagicInfo works only on MagicInfo model.**

✱ **The Input source of TV works only on TV model.**

✱ **PIP Size can be controlled with turning on the LCD Display power.**

PIP

PIP Source

1. Click PIP of the main icons and the PIP control screen appears.

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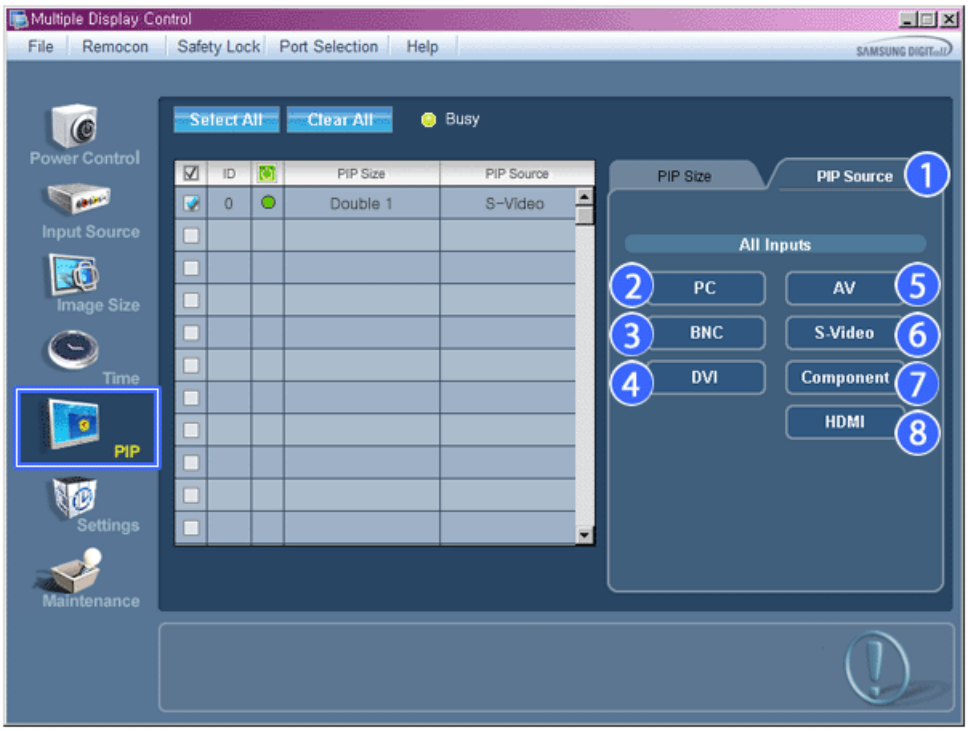

✱ Info Grid shows some basic information necessary to PIP Source Control.

1) PIP Source
   - PIP Source can be controlled with turning on the LCD Display power.
2) PC
   - Changes the source of the PIP of the selected display to PC.
3) BNC
   - Changes the source of the PIP of the selected display to BNC.
4) DVI
   - Changes the source of the PIP of the selected display to DVI.
5) AV
   - Changes the source of the PIP of the selected display to AV.
6) S-Video
   - Changes the source of the PIP of the selected display to S-Video.
7) Component
   - Changes the source of the PIP of the selected display to Component.
8) HDMI
   - Changes the source of the PIP of the selected display to HDMI.

   Note: Some of the PIP Sources may not be available for selection, depending on the input source type of the Main Screen.

✱ **The Input source of MagicInfo works only on MagicInfo model.**

✱ **The PIP Control feature is available only for the displays whose power status is ON and the PIP function is set to ON.**

Settings

Picture

1. Click Settings of the main icons and the Settings Control screen appears.

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* Info Grid shows some basic information necessary to Settings Control.
When each function is selected, the set value of the selected function is displayed in the slide.When selected, each function fetches the value for the set and displays it on the slide bar. When "Select All" is chosen, the default value is displayed. Changing a value in this screen will automatically change the mode to "CUSTOM."

1) Picture
   - Available only for TV, AV, S-Video, Component, HDMI, DTV.
2) Contrast
   - Adjusts Contrast of the selected display.
3) Brightness
   - Adjusts Brightness of the selected display.
4) Sharpness
   - Adjusts Sharpness of the selected display.
5) Color
   - Adjusts Color of the selected display.
6) Tint
   - Adjusts Tint of the selected display.
   - Available only for NT.
7) Color Tone
   - Adjusts the Color Tone for the selected display.
8) Color Temp
   - Adjusts the Color Temp for the selected display.
9) Brightness Sensor
   - Adjusts the Brightness Sensor for the selected display.
10) Dynamic Contrast
   - Adjusts the Dynamic Contrast for the selected display.

* **The Input source of MagicInfo works only on MagicInfo model.**
* **Color Temp is only enabled if the Color Tone is set to Off.**
* **The Input source of TV works only on TV model.**
* **This feature is available only for the displays whose power status is ON and if no selection is made, the factory default is displayed.**

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Settings

Picture PC

1. Click Settings of the main icons and the Settings Control screen appears.

✱ Info Grid shows some basic information necessary to Settings Control. When each function is selected, the set value of the selected function is displayed in the slide. When selected, each function fetches the value for the set and displays it on the slide bar. When "Select All" is chosen, the default value is displayed. Changing a value in this screen will automatically change the mode to "CUSTOM."

1) Picture PC
   - Available only for PC, BNC, DVI.
2) Contrast
   - Adjusts Contrast of the selected display.
3) Brightness
   - Adjusts Brightness for the selected display.
4) Red
   - Adjusts red Color of the selected display.
   - Available only for NT.
5) Green
   - Adjusts green Color of the selected display.
   - Available only for NT.
6) Blue
   - Adjusts blue Color of the selected display.
   - Available only for NT.
7) Color Tone
   - Adjusts the Color Tone for the selected display.
8) Color Temp
   - Adjusts the Color Temp for the selected display.
9) Brightness Sensor
   - Adjusts the Brightness Sensor for the selected display.
10) Dynamic Contrast
   - Adjusts the Dynamic Contrast for the selected display.

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- **The Input source of MagicInfo works only on MagicInfo model.**
- **The Input source of TV works only on TV model.**
- **Color Temp is only enabled if the Color Tone is set to Off.**
- **This feature is available only for the displays whose power status is ON and if no selection is made, the factory default is displayed.**

Settings

Audio

1. Click Settings of the main icons and the Settings Control screen appears.

- Info Grid shows some basic information necessary to Settings Control. When each function is selected, the set value of the selected function is displayed in the slide. When selected, each function fetches the value for the set and displays it on the slide bar. When "Select All" is chosen, the default value is displayed. Changing a value in this screen will automatically change the mode to "CUSTOM."

1) Audio
   - Controls audio settings for all input sources.
2) Bass
   - Adjusts Bass of the selected display.
3) Treble
   - Adjusts Treble of the selected display.
4) Balance
   - Adjusts Balance of the selected display.
5) SRS TS XT
   - SRS TS XT Sound ON/OFF of the selected display.
6) Sound Select
   - Select either Main or Sub when PIP is On.

- **The Input source of MagicInfo works only on MagicInfo model.**
- **The Input source of TV works only on TV model.**
- **This feature is available only for the displays whose power status is ON and if no selection is made, the factory default is displayed.**

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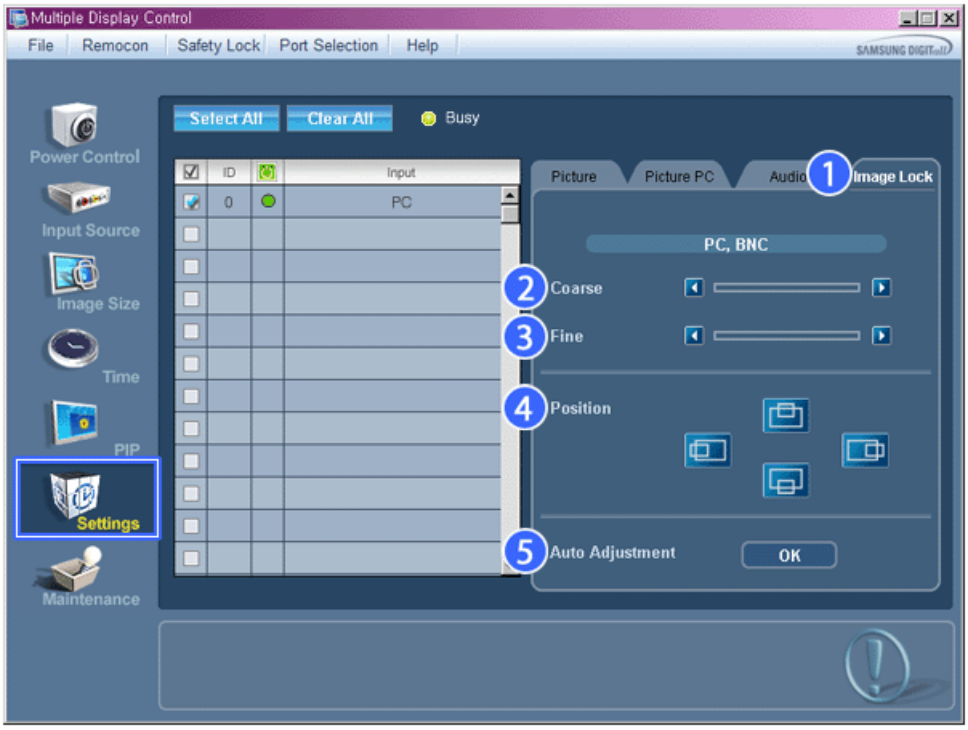
Settings

Image Lock

1. Click Settings of the main icons and the Settings Control screen appears.



✱ Info Grid shows some basic information necessary to Settings Control.

1) Image Lock
   - Available only for PC, BNC.
2) Coarse
   - Adjusts Coarse of the selected display.
3) Fine
   - Adjusts Fine of the selected display.
4) Position
   - Adjusts Position of the selected display.
5) Auto Adjustment
   - Self-Adjust to the incoming PC signal.

✱ **The Input source of MagicInfo works only on MagicInfo model.**

✱ **The Input source of TV works only on TV model.**

✱ **Settings Control is available only for the displays for which the power status is ON.**

Maintenance

Lamp Control

1. Click on the "Maintenance" icon in the Main Icon column to display the Maintenance screen.

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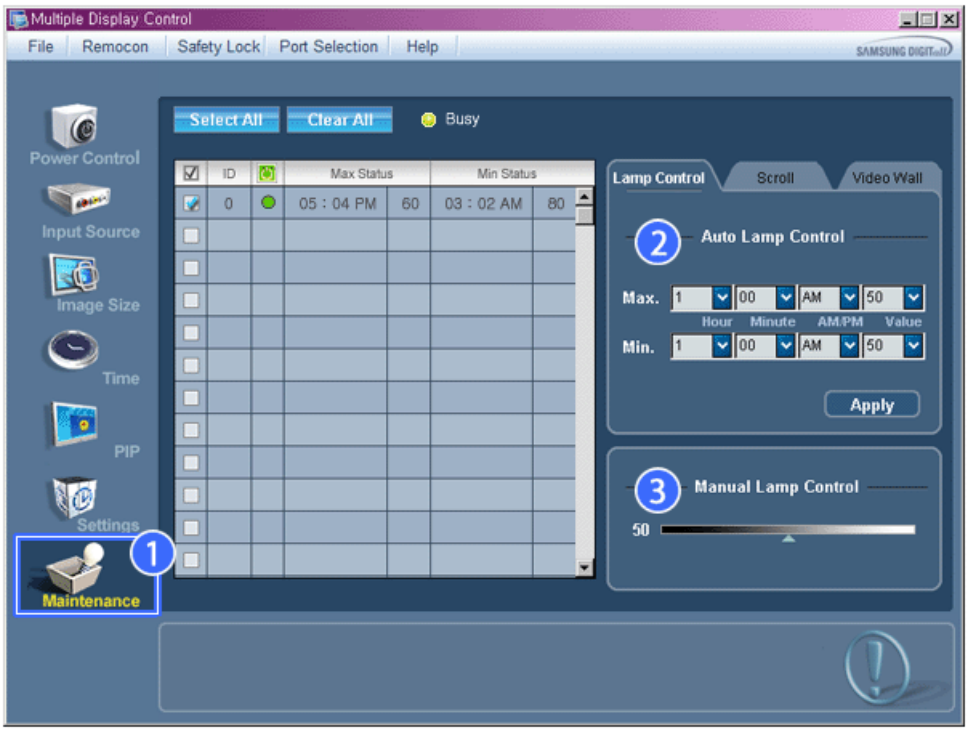

✱ An "Info Grid" showing several basic data items appears.

1) Maintenance
   - Allows the Maintenance Control function for all input sources.

2) Auto Lamp Control
   - Automatically adjusts the backlight of the selected display at a specified time.
     The Manual Lamp Control automatically turns off if you adjust using the Auto Lamp Control.

3) Manual Lamp Control
   - Allows you to adjust the backlight of the selected display regardless of the time.
     The Auto Lamp Control automatically turns off if you adjust using the Manual Lamp Control.

✱ **The Maintenance Control feature is available only for the displays whose power status is ON.**

✱ **The Input source of MagicInfo works only on MagicInfo model.**

✱ **The Input source of TV works only on TV model.**

Maintenance

Scroll

1. Click on the "Maintenance" icon in the Main Icon column to display the Maintenance screen.

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1) Scroll
   - This function is used to remove the afterimages that occur when a still screen is displayed on the selected display
     for a long time.
2) Pixel Shift
   - This allows the screen to be moved finely at the specified time interval.
3) Safety Screen
   - The Safety Screen function is used to prevent afterimages from occurring when a still screen is displayed on the monitor for a long time. The Interval item is used to set the repetition cycle in hour units and the Time item is used to set the time when the Safety Screen function must be performed.
     The Type item can be set to Scroll, Pixel, Bar, Eraser, All White, or Pattern.
4) Safety Screen2
   - This function is used to prevent afterimages from occurring. There are five (5) types that you can select and control with this function.

* **For the Scroll type, the Time item can be set to 1, 2, 3, 4 or 5. For the Bar and Eraser types, it can be set to 10, 20, 30, 40 or 50. For the All White and Pattern type, it can be set to 1, 5, 10, 20 or 30.**
* **The Input source of MagicInfo works only on MagicInfo model.**
* **The Input source of TV works only on TV model.**
* **The Maintenance Control feature is available only for the displays whose power status is ON.**

Maintenance

Video Wall

1. Click on the "Maintenance" icon in the Main Icon column to display the Maintenance screen.

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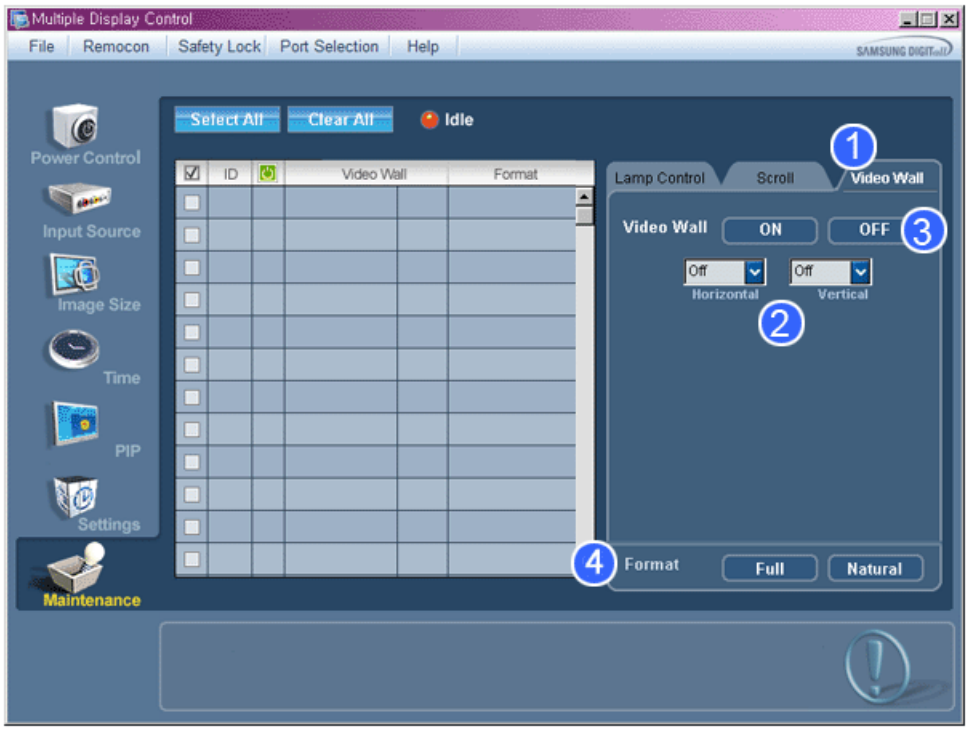


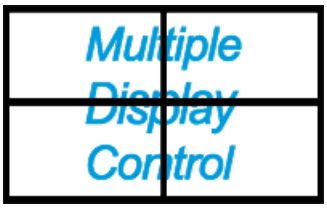
1) Video Wall
   - A Video Wall is a set of video screens that are connected together, so that each screen shows a part of the whole picture or so that the same picture is repeated on each screen.

2) Video Wall (Screen divider)
   - The screen can be divided into.
     You can select a number of screens with a different layout when dividing.
     - Select a mode from Screen divider.
     - Select a display from Display Selection.
     - The place will be set up by pressing a number in the selected mode.
     - The MDC program supplied by Samsung supports up to 5x5 LCD Displayes.

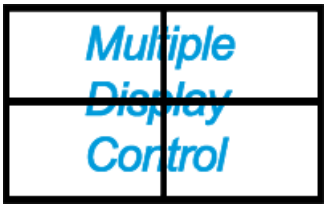
3) On / Off
   - Turns on/off the Video Wall function of the selected display.

4) Format
   - The format can be selected to see a divided screen.

- Full



- Natural



✱ **You may not operate this function in MagicInfo.**
✱ **The Input source of TV works only on TV model.**
✱ **The Maintenance Control function is available only for the displays where the power status is ON.**

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Troubleshooting

1. The display you wish to control does not appear on the Power Control Info Grid
   - Check the connection of RS232C. (Check if it is properly connected to the Com1 port)
   - Check the displays to see if any of the other displays connected have the same ID. If more than one displays have the same ID, those displays are not properly detected by the program due to data conflict.
   - Check if the Display Set ID is a number between 0 and **25**. (Adjust using the Display menu)

   Note : A Display Set ID must be a value between 0 and **25** .

2. The display you wish to control does not appear on the other Control Info Grids
   - Check to see if the display power is ON. (You can check this in Power Control Info Grid)
   - Check if you can change the input source of the display.

3. The dialogue box appears repeatedly.
   - Check to see if the display you wish to control is selected. ☑

4. Both On Timer and Off Timer have been set but different time is showing.
   - Apply current time to synchronize the display clocks.

5. The remote may not function properly when you turn off the remote Function, disconnect the RS-232C cable, or exit the program in an Irregular manner. Rerun the program and turn the remote function again to Restore normal functions.

   <Note> This program may malfunction due to problems in communication circuits or interference from electronic appliances nearby.

Settings Value Display In Multiple Display Mode

✱ When there are more than one displays connected, the settings values are displayed as follows.

1. No selection: Displays the Factory Default Value.
2. Selected one display: Fetches and displays the settings value for the selected display.
3. Selected one display (ID1) and add another display (ID3): The program, which was displaying the settings value of ID 1, fetches and displays the value of ID3.
4. Selected all sets using Select All: Returns to the Factory Default Value.

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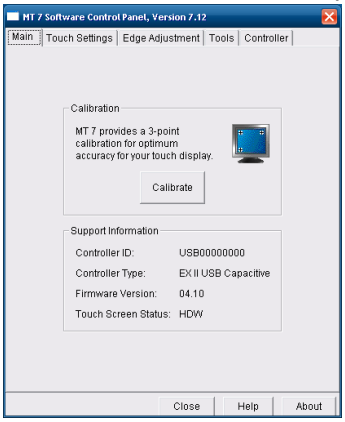
Software Control Panel (230TSN)

Main Tab

This tab covers touch sensor calibration as well as basic support information.



Calibration

The calibration process aligns the touch sensor with the underlying video. Specifically, calibration defines the dimensions of the active area of the sensor and locates the center of the sensor. If the sensor is not calibrated, the active area of the sensor may not be aligned properly or may be unnecessarily small.

You should calibrate the touch sensor in the following cases:

- Any time you change the size and position of the video image by adjusting the horizontal and vertical controls on your display.
- Any time the cursor does not follow the movement of your finger, or does not reach the edges of the touch sensor. If you continue to need additional accuracy along the edges, use the **Edge Adjustment** tab.

Calibrating the Touch Sensor

1. Select the **Main** tab.
2. Click the **Calibrate** button.

   Note

   If you are using a stylus (pen) and you are in Pen/Finger mode, a dialog will ask whether you wish to calibrate using Pen or Finger. Calibrate using each option separately and when you are done, MT 7 will restore your touch mode to Pen/Finger.

3. A calibration target appears in the lower left corner of the touch sensor.

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Note

If you press Escape or do not touch the sensor within twenty seconds, the system automatically cancels the calibration process with no change to the current settings.

4. Touch the sensor positioning your fingertip to completely cover the green target. This position is calculated upon liftoff and when you remove your finger, the target should turn red.

When touching the calibration target, make sure to:

- Perform the calibration in the position (sitting or standing) you expect to normally use the touch sensor.
- Touch the calibration target firmly and precisely with your fingertip. During **Calibration**, be careful to keep your fingernails and other fingers away from the touch sensor as you touch the target.

5. Repeat these instructions for additional calibration targets.

6. Once you have calibrated the touch sensor, a dialog box will appear to ask if you wish to test, accept or cancel this calibration.
   - If you select **Accept**, then the new calibration settings are automatically accepted.
   - If you select **Test**, then a Draw (refer to the Tools tab for more details) screen appears. When you exit Draw mode, a dialog will prompt, "**Are you satisfied with the results?**"
     - Selecting **Yes** will keep the new calibration settings.
     - Selecting **No** will restore the original (pre-calibration) settings.
   - If you select **Cancel**, the original settings will be restored without change.

Testing the Calibration

If you accidentally liftoff from the sensor in the wrong place during calibration, you will distort the touch sensor calibration. Test by touching several points on the sensor to make sure you are satisfied with the calibration results. The cursor should be located underneath your finger or pen when you touch the sensor. Repeat the Calibration process until you are satisfied. Recalibrate the touch sensor if any of the following tests fail.

- Touch random points on the sensor. The cursor should be located underneath your finger or pen when you touch the sensor.
- Drag your finger across the sensor and check that the cursor follows your movements.

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- Touch each corner and along the edges of the sensor. Verify that the cursor reaches the full image area of the sensor. Be sure you can touch and activate all icons and menus across the entire sensor.
- If you are using a pen stylus, be sure to perform the calibration procedure using the pen.
- If you need to recalibrate the sensor, make sure to touch the targets carefully. It is possible that one of your touches did not register properly or you accidentally touched the sensor in the wrong place during calibration. For example, if you touch beyond the targets or into the non-image area, you will distort the sensor calibration.

Support Information

This information helps identify your system setup for troubleshooting purposes. If for any reason you need to call Technical Support, this information will be useful.

Controller ID

On the **Main** tab, this is an information-only field in a single controller situation - if you have more than one controller you can select the specific controller you want to adjust.

Controller Type

This field displays the type of controller currently attached to your system. This data may be useful for Technical Support issues.

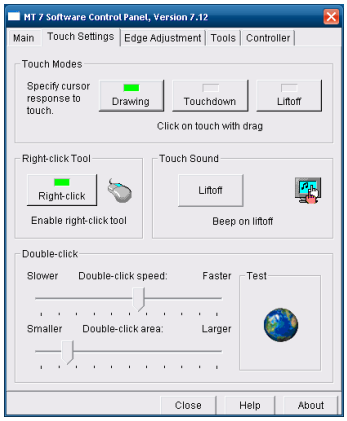
Firmware Version

These digits represent the version number and revision level of the touch controller firmware.

Touch Screen Status

Touch Screen Status refers to whether or not the sensor has been found and is operational.

Touch Settings Tab



The **Touch Settings** tab enables you to customize the response of your touch sensor. You can change the way the system responds to your touch, add a right-click tool to your desktop, tell your system to beep on touch, and define the double-click speed and area of your touch.

Touch Modes

The available **Touch Modes** options are **Drawing**, **Touchdown**, and **Liftoff**.

Drawing Mode (Default Value)

Drawing Mode is most useful for draw, paint, illustration, and graphics applications. In Drawing Mode, a touch is equivalent to pressing and

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holding down the mouse button. This is considered the easiest mode to use with an immediate reaction to touch. Lifting off is equivalent to releasing the mouse button.

- To click, touch the object. Lift off the sensor.
- To double-click; touch the object twice quickly at the same location.
- To drag, touch the object. Slide your finger to the new location. Lift off the sensor

Touchdown Mode

Touchdown Mode enables you to create an immediate button action as soon as you touch the sensor. In **Touchdown** Mode, you cause a button down at the cursor location, with a short pause and then a button up. You can leave your finger on the sensor but only a single touch is registered until you lift your finger off the sensor and touch down again.

Touching the sensor is equivalent to pressing and releasing the mouse button. The action occurs as soon as you touch the sensor. This mode is best for button-based applications (like a calculator). Drawing or dragging is not supported in this mode.

Liftoff Mode

Liftoff Mode enables you to position the cursor where you want before creating a button action. In **Liftoff** Mode, the cursor will follow your finger for a more accurate touch.When you want to select an item, lifting your finger off the sensor will cause a button down, short pause, and then a button up to occur.

Touching the sensor is equivalent to moving the mouse position. The button down/button up action occurs when you remove your finger from the sensor. This mode is useful for applications requiring greater accuracy because it lets you carefully position the cursor before acting on it. Drawing or dragging is not supported in this mode.

Right-Click Tool (not available on Linux)

This option places an icon on the desktop (always on top of your application) that allows you to select which mouse button to activate on touch. Note that this works for the next click action only. Control returns to the left mouse button as soon as you are done.

You can position this icon anywhere on your desktop by selecting it, pausing until the four-pointed arrow appears, and dragging it wherever you want.

Left button is typically used for normal select and normal drag. Right button is typically used for applet properties such as context menu and special drag.

Double-Click Speed (not available on Windows® CE or Linux®)

Double-click speed defines how quickly you must touch the sensor for the system to interpret your actions as a double-click. Set the double-click speed in the slow to medium range for optimum performance with a touch sensor.

Touch the globe twice to test the double-click speed and area settings. If the globe begins to spin, the sensor recognized your touch as a double-click.

Note

Changing this setting will affect the double-click setting of the mouse.

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Double-Click Area (not available on Windows® CE or Linux®)

Double-click area defines the space in which you must touch the sensor for the system to interpret your actions as a double-click. Set the double-click area in the medium to high range for optimum performance with a touch sensor.

Touch the globe twice to test the double-click speed and area settings. If the globe begins to spin, the sensor recognized your touch as a double-click.

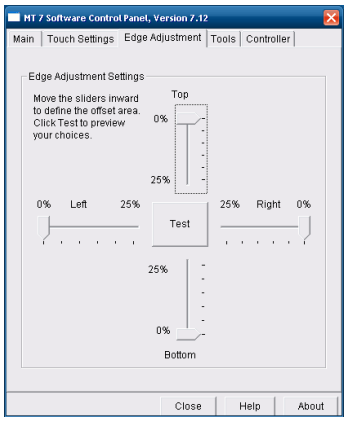
Note

Changing this setting will affect the double-click setting of the mouse.

Edge Adjustment Tab

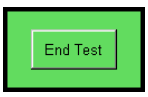
Once you calibrate the touch sensor, the cursor should be located directly beneath your finger when you touch the sensor. However, this may make it difficult to touch items at the very edges of the sensor. The **Edge Adjustment** tab enables you to define an offset area in which the cursor moves closer to the edges of the sensor so you can easily and more precisely select small items, such as single words, the Windows™ Start button, check boxes, or radio buttons.

For example, if you have a row of buttons along the left edge of your touch sensor, you may want to set an edge adjustment to enable users to easily activate these buttons.Because each edge is independent of the other, you only need to adjust the left margin to accommodate this row of buttons.



Edge Adjustment Setting

To set the **Edge Adjustment**, move the sliders inward to define the offset area. These changes take effect immediately. Click **Test** to preview your choices. The area you have defined appears as a colored area as shown below. Within this colored area, the cursor will automatically move ahead of your finger so you can more easily touch items closer to the edge.



Determine if the area you have defined is sufficient for your needs. Can you touch into the corners and along the edges of the sensor? Click **Escape**, **End Test**, or Return to go back to the **Edge Adjustment** tab. If you are satisfied with the selections you have made - you are done. If not, adjust the sliders to better accommodate your needs.

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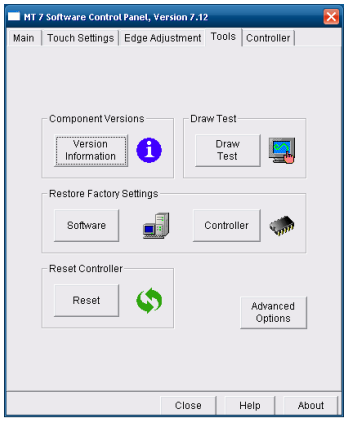
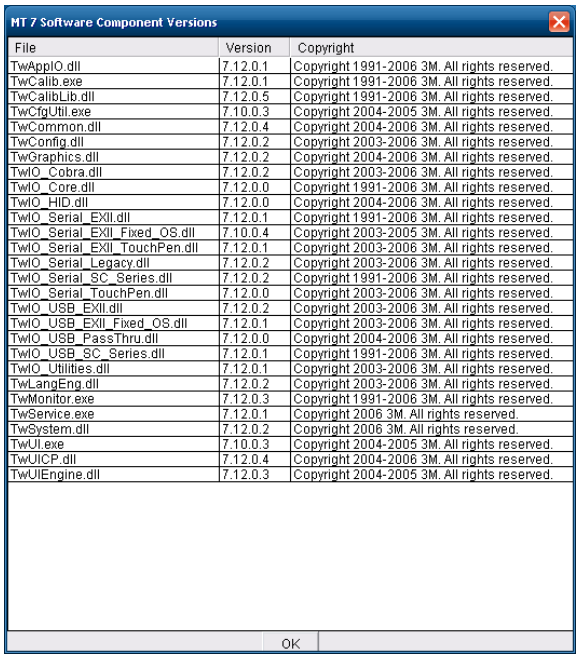
Tools Tab



The **Tools** tab enables you to perform a variety of diagnostics to optimize the performance of your touch sensor. This tab is also the gateway to advanced touch options.

Component Versions

This is an informational screen for diagnostic purposes that details the building blocks of MT 7 and its version numbers.



File	Version	Copyright
TwAppIO.dll	7.12.0.1	Copyright 1991-2006 3M. All rights reserved.
TwCalib.exe	7.12.0.1	Copyright 1991-2006 3M. All rights reserved.
TwCalibLib.dll	7.12.0.5	Copyright 1991-2006 3M. All rights reserved.
TwCfgUtil.exe	7.10.0.3	Copyright 2004-2005 3M. All rights reserved.
TwCommon.dll	7.12.0.4	Copyright 2004-2006 3M. All rights reserved.
TwConfig.dll	7.12.0.2	Copyright 2003-2006 3M. All rights reserved.
TwGraphics.dll	7.12.0.2	Copyright 2004-2006 3M. All rights reserved.
TwIO_Cobra.dll	7.12.0.2	Copyright 2003-2006 3M. All rights reserved.
TwIO_Core.dll	7.12.0.0	Copyright 1991-2006 3M. All rights reserved.
TwIO_HID.dll	7.12.0.0	Copyright 2004-2006 3M. All rights reserved.
TwIO_Serial_EXII.dll	7.12.0.1	Copyright 1991-2006 3M. All rights reserved.
TwIO_Serial_EXII_Fixed_OS.dll	7.10.0.4	Copyright 2003-2005 3M. All rights reserved.
TwIO_Serial_EXII_TouchPen.dll	7.12.0.1	Copyright 2003-2006 3M. All rights reserved.
TwIO_Serial_Legacy.dll	7.12.0.2	Copyright 2003-2006 3M. All rights reserved.
TwIO_Serial_SC_Series.dll	7.12.0.2	Copyright 1991-2006 3M. All rights reserved.
TwIO_Serial_TouchPen.dll	7.12.0.0	Copyright 2003-2006 3M. All rights reserved.
TwIO_USB_EXII.dll	7.12.0.2	Copyright 2003-2006 3M. All rights reserved.
TwIO_USB_EXII_Fixed_OS.dll	7.12.0.1	Copyright 2003-2006 3M. All rights reserved.
TwIO_USB_PassThru.dll	7.12.0.0	Copyright 2004-2006 3M. All rights reserved.
TwIO_USB_SC_Series.dll	7.12.0.1	Copyright 1991-2006 3M. All rights reserved.
TwIO_Utilities.dll	7.12.0.1	Copyright 2003-2006 3M. All rights reserved.
TwLangEng.dll	7.12.0.2	Copyright 2003-2006 3M. All rights reserved.
TwMonitor.exe	7.12.0.3	Copyright 1991-2006 3M. All rights reserved.
TwService.exe	7.12.0.1	Copyright 2006 3M. All rights reserved.
TwSystem.dll	7.12.0.2	Copyright 2006 3M. All rights reserved.
TwUI.exe	7.10.0.3	Copyright 2004-2005 3M. All rights reserved.
TwUICP.dll	7.12.0.4	Copyright 2004-2006 3M. All rights reserved.
TwUIEngine.dll	7.12.0.3	Copyright 2004-2005 3M. All rights reserved.

Draw Test

Note

You must be in **Draw** mode for this to work properly.

The Draw program lets you test the operation of the touch sensor and pen by checking the accuracy and speed with which the system responds to your touch. To draw, simply touch the sensor and drag your finger or pen.

The following options will help you use the draw program more effectively:

- Press B (blank) to clear the screen and display a blank drawing canvas.

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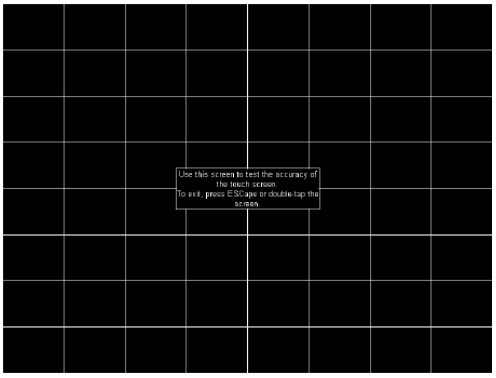
- Press G (grid) to clear the screen and display a grid that you can use as a drawing guide (default setting).
- Press L (line) to draw solid lines on the screen (default setting).
- Press D (dots) to draw dotted lines on the screen, where each dot represents a point reported by the touch sensor.
- Press the Space Bar to clear the screen.



Restore Factory Settings

Software

The Reset Software option is useful if you have reconfigured the MT 7 software and need to get back to a working state. This option will restore supplier factory configuration settings. If none exist, it will reset to 3M Touch System defaults.

Controller

The Restore Controller option is useful if you have reconfigured the controller and need to get back to a working state. Pressing this button restores 3M Touch System factory-set system defaults.

If after restoring controller factory defaults, you lose touch, you will need to reboot in order to restore touch.

Note

You must perform a calibration after restoring controller defaults.

Reset Controller

Use this only at the direction of Technical Support. This command initializes the hardware and the firmware, causes the controller to stop sending data, and recalculates the environmental conditions (for example, stray and offset values). The Reset command also cancels existing commands and returns the controller to normal operation.

Advanced Touch Options

Note

Important Note: Executing the **Advanced Options** may alter the performance of your touch sensor or render it inoperable. You should be aware of expected results before executing any option. If you are not familiar with the outcome of these settings, you should not be using these options.

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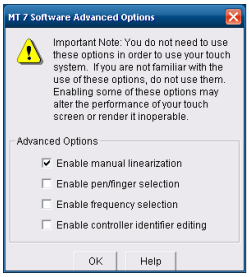
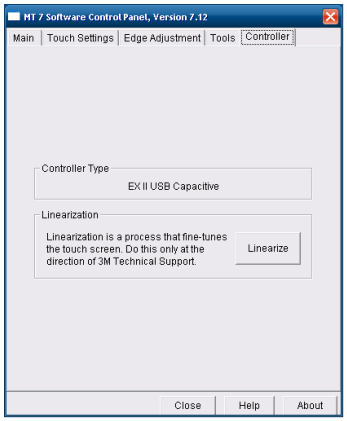
This option controls certain advanced functions for your controller. Depending on the options you have selected and the availability of that function for your given controller, you can choose certain **Advanced Options** from this screen.

- Enable manual linearization
- Enable frequency selection

Refer to the **Controller** Tab for a discussion of the various options associated with these **Advanced Options** settings.


MT 7 Software Advanced Options
Important Note: You do not need to use these options in order to use your touch system. If you are not familiar with the use of these options, do not use them. Enabling some of these options may alter the performance of your touch screen or render it inoperable.
Advanced Options
Enable manual linearization
Enable pen/finger selection
Enable frequency selection
Enable controller identifier editing
OK
Help

Controller Tab



The **Controller** tab contains different choices depending on the type of touch controller(s) you have attached to your system and which options you selected from the **Advanced Options** from the **Tools** tab.

Controller Type

If you have more than one controller attached to your system, this field displays the controller currently selected on the **Main** tab. This data may be useful for Technical Support issues.

Linearization

With certain controllers, you can perform a linearization to fine-tune your touch sensor. It should be performed only at the direction of 3M Touch Systems, Inc. Technical Support.Linearization consists of touching 25 targets on the screen followed by 16 additional points to determine specific point accuracy over the face of the display.

The EX, CX, and some RX series touch controllers support Linearization:

To perform a 25-point linearization of the touch sensor:

1. Make sure the video image is centered in the screen area using the horizontal and vertical controls.
2. Open the touch control panel and select the **Controller** tab.

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3. Click **Linearize**. This will bring up, one at a time, 25 linearization targets on the screen.

   Note

   If you press Escape or do not touch the sensor within 20 seconds, the system automatically cancels the linearization process with no change to the current settings.

4. Touch the sensor and position your fingertip to completely cover the green target.

   ### When touching the target, make sure you:

   - Face the display directly.
   - Perform the linearization in the position (sitting or standing) you expect to use the touch sensor.
   - Touch the target firmly and precisely with your fingertip. Be careful to keep your other fingers away from the sensor as you touch the target. Hold a steady touch over the target until you hear a beep or until the target turns red.

5. Repeat these instructions until all 25 targets have been touched.

   - Face the display directly.

     A dialog will appear asking if you wish to "**Test**, **Accept**, or **Cancel**".

   - If you select **Accept**, then the new calibration settings are automatically accepted.
   - If you select **Cancel**, the original settings will be restored without change.
   - If you select **Test**, the 25 targets will now be replaced with a set of 16 targets used to verify the linearization performed in steps 1 through 5.

   These targets are yellow to begin with. If you successfully touch the target, it turns green. If you are off, it turns red and returns a percentage error number. If the linearization is not within acceptable tolerances, you should perform the linearization process again.

   Repeat the previous process for each of these targets. This process automatically returns to the control panel once complete. If you are using a pen stylus, repeat the linearization procedure with the pen.

   To test the accuracy of the linearization process, use the **Draw Test** program (found on the **Tools** Tab) to draw some lines on the screen. Check that they are smooth, straight, and thin. You do not want lines to look keystoned or curved.

   To exit this program at any time during the process, press Escape.

Touch Screen Frequency

Note

This option applies to capacitive EX and CX-series controllers.

From the **Tools** tab, you can choose the **Advanced Options** button. From the **Advanced Options** dialog, select **Enable Frequency Selection** to activate this option on the **Controller** tab if you are using a capacitive EX-based controller.

This option adjusts the operating frequency of the touch controller. In general, you will not need to adjust the **Touch Screen Frequency**. However, if you are experiencing problems with a jittery cursor, ragged lines, or random touch points, you may want to run the **Enable Frequency Selection** option.

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Use the **Enable Frequency Selection** option to test the available frequency settings and determine the best frequency. The range of frequency settings and the default setting depends on your touch controller. You can set a new operating frequency, and then check the performance of the touch sensor at that frequency setting.

Be aware that if you choose **Restore Factory Settings** → **Controller** from the **Tools** tab, you will change the **Touch Screen Frequency** to the factory default setting. You may need to redo the **Touch Screen Frequency** at this time

Touch Screen Frequency Procedure

From the **Tools** tab, you can choose the **Advanced Options** button. From the **Advanced Options** dialog, select **Enable Frequency Selection** to activate this option on the controller tab if you are using a capacitive EX based controller.

In the **Touch Screen Frequency** box, you will see a pull down list of several frequency options. In general, the highest possible frequency will provide the best results. Once you change the frequency, do not touch the sensor for approximately 30 seconds. Touch will return when the frequency has been changed. Test to see if you are satisfied.

On a pen controller system, you have the option to change the frequency for both your finger and the pen if you are using Pen/Finger mode.

Testing the Newly Selected Frequency

Any time you adjust the **Touch Screen Frequency** you should test how the touch sensor is working and verify you are satisfied with the operation of the touch sensor.

Test the sensor by touching in several places and sliding your finger around the sensor.The cursor should hold steady and smooth. If you see erratic or jittery cursor movement, readjust the **Touch Screen Frequency**.

Adjust the frequency until your touch test produces acceptable results. A good test is to go to the Draw program and hold your finger steady on the sensor. If the resulting pattern is a crisp and clear single dot, you should have a good frequency.

It is recommended that you recalibrate the touch sensor after you run the **Touch Screen Frequency** option.

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Adjusting the LCD Display

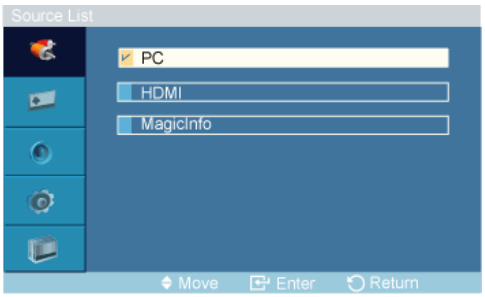
Input

Available Modes

- **PC**
- **HDMI**
- **MagicInfo**

Source List PHM

MENU → ENTER → [Input] → ENTER → [Source List]



→ ▲ , ▼ → ENTER

Use to select **PC**, **DVI** or other external input sources connected to the LCD Display. Use to select the screen of your choice.

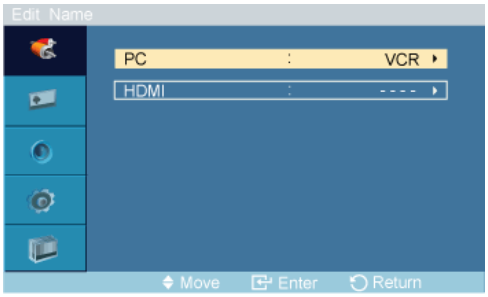
1. **PC**
2. **HDMI**
3. **MagicInfo**

Note

- You can also select the source by pressing the SOURCE button on your remote.

Edit Name PHM

MENU → ENTER → [Input] → ▼ → ENTER → [Edit Name]



→ ▲ , ▼ → ENTER

Name the input device connected to the input jacks to make your input source selection easier.

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VCR, **DVD**, **Cable STB**, **HD STB**, **Satellite STB**, **AV Receiver**, **DVD Receiver**, **Game**, **Camcorder**, **DVD Combo**, **DHR**, **PC**

Picture [PC / MagicInfo Mode]

Available Modes

- **PC**
- **HDMI**
- **MagicInfo**

MagicBright PM

MENU → ▼ → ENTER → [Picture] → ENTER → [MagicBright]

→ ▲ , ▼ → ENTER

MagicBright is a feature providing the optimum viewing environment depending on the contents of the image you are watching. Currently four different modes are available: **Entertain**, **Internet**, **Text** and **Custom**. Each mode has its own pre-configured brightness value.

(Not available when **Dynamic Contrast** mode is set to **On**.)

1. **Entertain**

   High brightness

   For watching motion pictures such as from a DVD or VCR.

2. **Internet**

   Medium brightness

   For working with a mixture of images such as texts and graphics.

3. **Text**

   Normal brightness

   For documents or works involving heavy text.

4. **Custom**

   Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste.

   If this is the case, adjust the brightness and contrast by using the OSD menu.

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Custom PM

By using the on-screen menus, the contrast and brightness can be changed to your personal preference.

MENU → ▼ → ENTER → [Picture] → ▼ → ENTER → [Custom]

(Not available when **Dynamic Contrast** mode is set to **On**.)

Note

By adjusting the picture using the **Custom** function, **MagicBright** will change to **Custom** mode.

Contrast

MENU → ▼ → ENTER → [Picture] → ▼ → ENTER → [Custom]→ ENTER→ [Contrast]

→ ◀, ▶ → ENTER

Adjusts the Contrast.

Brightness

MENU → ▼ → ENTER → [Picture] → ▼ → ENTER → [Custom] → ▼ → ENTER → [Brightness]

→ ◀, ▶ → ENTER

Adjusts the Brightness.

Sharpness

MENU → ▼ → ENTER → [Picture] → ▼ → ENTER → [Custom] → ▼ → ▼ → ENTER → [Sharpness]

→ ◀, ▶ → ENTER

Adjusts the Sharpness.

Color Tone PM

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →ENTER → [Color Tone]

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→ ▲ , ▼ → ENTER

The color tones can be changed.

(Not available when **Dynamic Contrast** mode is set to **On**.)

1. **Off**
2. **Cool**
3. **Normal**
4. **Warm**
5. **Custom**

Note

If you set the **Color Tone** to **Cool**, **Normal**, **Warm**, or **Custom**, the **Color Temp** function is disabled.

If you set the **Color Tone** to **Off**, the **Color Control** function is disabled

Color Control PM

Adjusts individual Red, Green, Blue color balance.

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →▼→ ENTER → [Color Control]

(Not available when **Dynamic Contrast** mode is set to **On**.)

Note

If you adjust the picture by using the **Color Control** function, **Color Tone** will turn to the **Custom** mode.

Red

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →▼ → ENTER → [Color Control]→ ENTER → [Red]

→ ◀, ▶ → ENTER

Green

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →▼ → ENTER → [Color Control]→ ▼ → ENTER → [Green]

→ ◀, ▶ → ENTER

Blue

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →▼ → ENTER → [Color Control]→ ▼ → ▼ → ENTER → [Blue]

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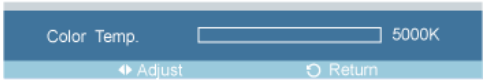
→ ◀, ▶ → ENTER

Color Temp. PM

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →▼ → ENTER → [Color Temp.]



→ ◀, ▶ → ENTER

Color Temp is a measure of the 'warmth' of the image colors.

(Not available when **Dynamic Contrast** mode is set to **On**.)

Note

This function is only enabled if the **Color Tone** is set to **Off**.

Image Lock P

Image Lock is used to fine-tune and get the best image by removing noise that creates unstable images with jitters and shakiness. If satisfactory results are not obtained using the Fine adjustment, use the Coarse adjustment and then use Fine again.

(Available in **PC** mode only)

(Not available when **Dynamic Contrast** mode is set to **On**.)

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →▼ →▼ → ENTER → [Image Lock]

Coarse

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →▼ →▼ → ENTER → [Image Lock]→ ENTER → [Coarse]

→ ◀, ▶ → ENTER

Removes noise such as vertical stripes. Coarse adjustment may move the screen image area. You may relocate it to the center using the horizontal control menu.

Fine

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →▼ →▼ → ENTER → [Image Lock]→ ▼ → ENTER → [Fine]

→ ◀, ▶ → ENTER

Removes noise such as horizontal stripes. If the noise persists even after Fine tuning, repeat it after adjusting the frequency (clock speed).

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H-Position

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →▼ →▼ → ENTER → [Image Lock]→ ▼ → ▼ → ENTER → [H-Position]

→ ◀, ▶ → ENTER

Adjusts the screen location horizontally.

V-Position

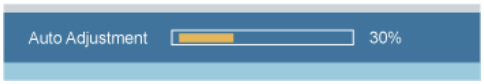
MENU → ▼ → ENTER → [Picture] → ▼ → ▼ →▼ →▼ → ENTER → [Image Lock]→ ▼ → ▼ → ▼ → ENTER → [V-Position]

→ ◀, ▶ → ENTER

Adjusts the screen location vertically.

Auto Adjustment P

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ →▼ → ENTER → [Auto Adjustment]



The values of **Fine**, **Coarse**, **Position** are adjusted automatically. By changing the resolution in the control panel, the auto function is performed.

(Available in **PC** mode only)

(Not available when **Dynamic Contrast** mode is set to **On**.)

Note

The direct button on the remote control is the 'AUTO' button.

Signal Balance P

This is used to make up for the weak RGB signal transmitted by a long signal cable.

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ →▼ →▼ → ENTER → [Signal Balance]

(Available in **PC** mode only)

(Not available when **Dynamic Contrast** mode is set to **On**.)

Signal Balance

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ →▼ →▼ → ENTER → [Signal Balance] → ENTER → [Signal Balance]

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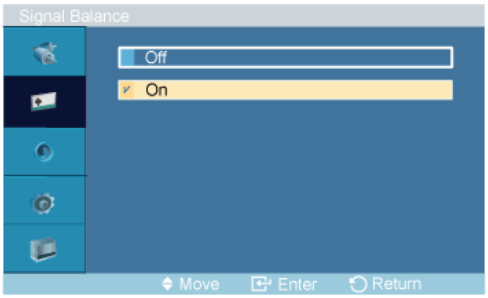

→ ▲ , ▼ → ENTER

Selects either **On** or **Off** with the signal control.

Signal Control

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ →▼→ ▼→ ENTER → [Signal Balance] → ENTER → ▼ → [Signal Control]

1. **R-Gain**

   MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ →▼→ ▼→ ENTER → [Signal Balance] → ENTER → ▼ → [Signal Control] → ENTER → [R-Gain] → ENTER

   → ◀, ▶ → ENTER

2. **G-Gain**

   MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ →▼→ ▼→ ENTER → [Signal Balance] → ENTER → ▼→ [Signal Control] → ▼ → ENTER→ [G-Gain] → ENTER

   → ◀, ▶ → ENTER

3. **B-Gain**

   MENU →▼→ ENTER → [Picture] →▼→▼→▼→▼→▼→▼→ ENTER → [Signal Balance] → ENTER → ▼→ [Signal Control] → ▼ → ▼ → ENTER→ [B-Gain] → ENTER

   → ◀, ▶ → ENTER

4. **R-Offset**

   MENU →▼→ ENTER → [Picture] →▼→▼→▼→▼→▼→▼→ ENTER → [Signal Balance] → ENTER → ▼→ [Signal Control] → ▼→ ▼ → ▼ → ENTER→ [R-Offset] → ENTER

   → ◀, ▶ → ENTER

5. **G-Offset**

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MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Signal Balance] → ENTER → ▼ → [Signal Control] → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [G-Offset] → ENTER

→ ◀, ▶ → ENTER

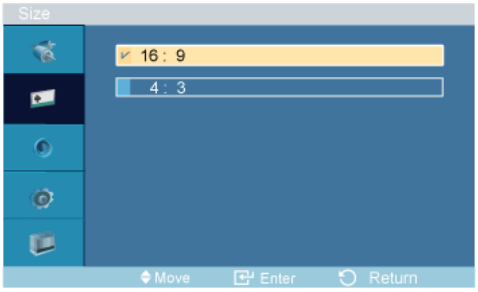
6. **B-Offset**

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Signal Balance] → ENTER → ▼ → [Signal Control] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [B-Offset] → ENTER

→ ◀, ▶ → ENTER

Size P

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Size]



→ ▲, ▼ → ENTER

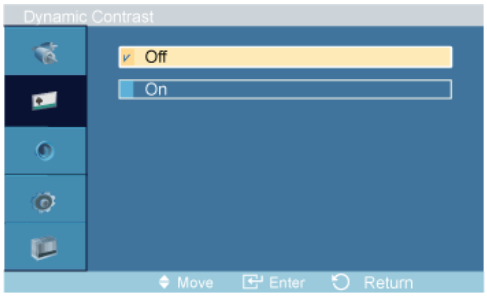
The **Size** can be switched.

(Not available when **Dynamic Contrast** mode is set to **On**.)

1. **16:9**
2. **4:3**

Dynamic Contrast P M

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Dynamic Contrast]



→ ▲, ▼ → ENTER

Dynamic Contrast automatically detects the distribution of the visual signal and adjusts to create an optimum contrast.

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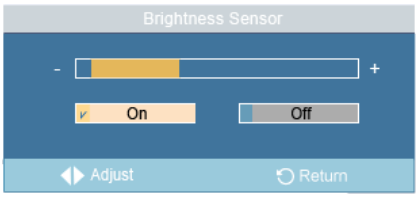
1. **Off**
2. **On**

Brightness Sensor PM

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ →▼→ ▼→ ▼→ ▼→ ▼→ ENTER → [Brightness Sensor]



→ ▲ , ▼ → ENTER

Brightness Sensor automatically detects distribution of the inputted visual signal and adjusts to create optimum brightness.

1. **Off**
2. **On**

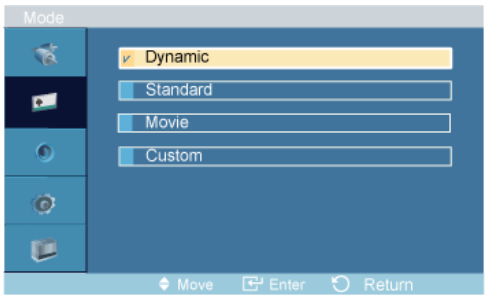
Picture [HDMI Mode]

Available Modes

- **PC**
- **HDMI**
- **MagicInfo**

Mode H

MENU → ▼ → ENTER → [Picture] → ENTER → [Mode]



→ ▲ , ▼ → ENTER

The LCD Display has four automatic picture settings ("**Dynamic**", "**Standard**", "**Movie**" and "**Custom**") that are preset at the factory.

Dynamic, **Standard**, **Movie**, or **Custom** can be activated.

(Not available when **Dynamic Contrast** mode is set to **On**.)

1. **Dynamic**
2. **Standard**

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3. **Movie**

4. **Custom**

Custom

By using the on-screen menus, the contrast and brightness can be changed to your personal preference.

MENU → ▼ → ENTER → [Picture] → ▼ → ENTER → [Custom]

(Not available when **Dynamic Contrast** mode is set to **On**.)

Contrast

MENU → ▼ → ENTER → [Picture] → ▼ → ENTER → [Custom] → ENTER→ [Contrast]

→ ◀, ▶ → ENTER

Adjusts the Contrast.

Brightness

MENU → ▼ → ENTER → [Picture] → ▼ → ENTER → [Custom] → ▼ → ENTER → [Brightness]

→ ◀, ▶ → ENTER

Adjusts the Brightness.

Sharpness

MENU → ▼ → ENTER → [Picture] → ▼ → ENTER → [Custom] → ▼ → ▼ → ENTER → [Sharpness]

→ ◀, ▶ → ENTER

Adjusts the picture Sharpness.

Color

MENU → ▼ → ENTER → [Picture] → ▼ → ENTER → [Custom] → ▼ → ▼ → ▼ → ENTER → [Color]

→ ◀, ▶ → ENTER

Adjusts the picture Color.

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Tint

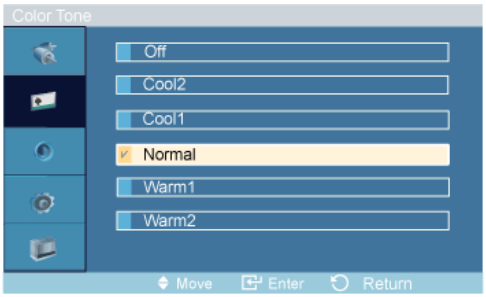
MENU → ▼ → ENTER → [Picture] → ▼ → ENTER → [Custom] → ▼ → ▼ → ▼→ ▼→ ENTER → [Tint]

→ ◀, ▶ → ENTER

Adds a natural tone to the display.

Color Tone

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ENTER → [Color Tone]



→ ▲ , ▼ → ENTER

The color tones can be changed. The individual Color components are also user adjustable.

(Not available when **Dynamic Contrast** mode is set to **On**.)

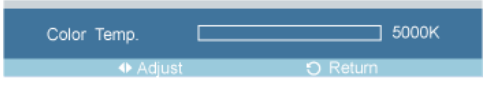
1. **Off**
2. **Cool2**
3. **Cool1**
4. **Normal**
5. **Warm1**
6. **Warm2**

Note

If you set the **Color Tone** to **Cool2**, **Cool1**, **Normal**, **Warm1**, or **Warm2**, the **Color Temp** function is disabled.

Color Temp.

MENU → ▼ → ENTER → [Picture] → ▼ →▼ →▼ → ENTER → [Color Temp.]



→ ◀, ▶ → ENTER

Color temp. is a measure of the 'warmth' of the image colors.

(Not available when **Dynamic Contrast** mode is set to **On**.)

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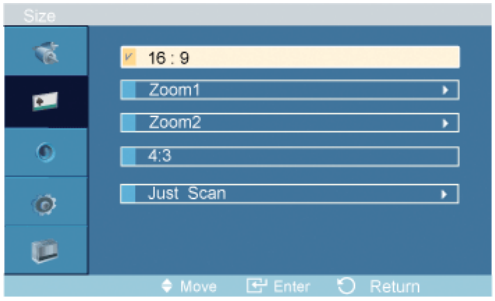
Note

This function is only enabled if the **Color Tone** is set to **Off**.

Size

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ → ENTER → [Size]



→ ▲ , ▼ → ENTER

The **Size** can be switched.

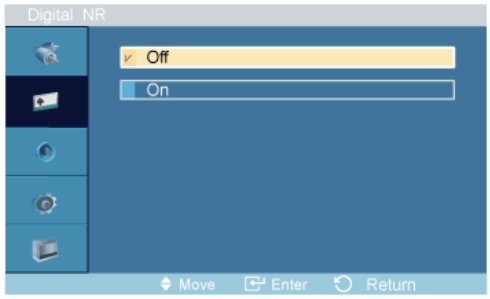
1. **16:9**
2. **Zoom 1**
3. **Zoom 2**
4. **4:3**
5. **Just Scan**

Note

The **Zoom1**, **Zoom2** are unavailable in **HDMI** mode.

Digital NR (Digital Noise Reduction)

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ →▼ → ENTER → [Digital NR]



→ ▲ , ▼ → ENTER

Turns the Digital Noise Reduction feature **Off**/**On**. The Digital Noise Reduction feature allows you to enjoy clearer and crisper images.

1. **Off**
2. **On**

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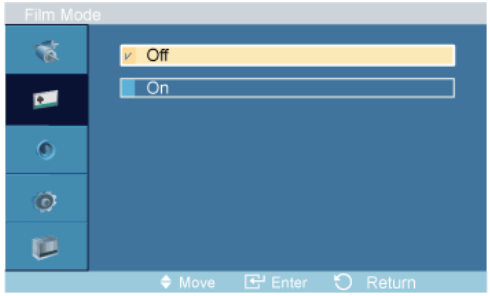
Note

Digital NR function is not available for all resolutions.

Film Mode

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Film Mode]



→ ▲ , ▼ → ENTER

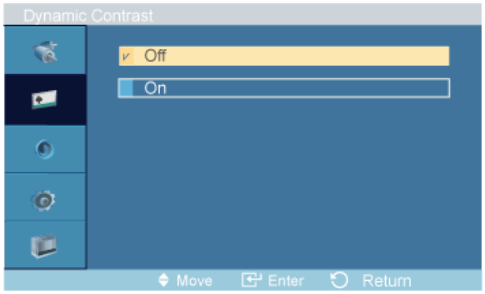
The **Film Mode** feature offers you a theater-quality viewing experience.

(In **HDMI** mode, this function is available when the input signal is interlaced scan; it is not available in progressive scan.)

1. **Off**
2. **On**

Dynamic Contrast H

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ →▼ →▼ →▼ → ENTER → [Dynamic Contrast]



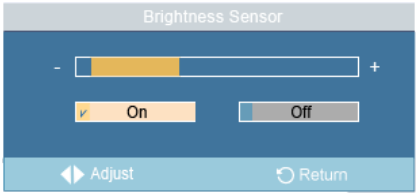
→ ▲ , ▼ → ENTER

Dynamic Contrast automatically detects the distribution of the visual signal and adjusts to create an optimum contrast.

1. **Off**
2. **On**

Brightness Sensor H

MENU → ▼ → ENTER → [Picture] → ▼ → ▼ → ▼ →▼ →▼ →▼ →▼ →▼ → ▼ → ENTER → [Brightness Sensor]



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→ ▲ , ▼ → ENTER

Brightness Sensor automatically detects distribution of the inputted visual signal and adjusts to create optimum brightness.

1. **Off**
2. **On**

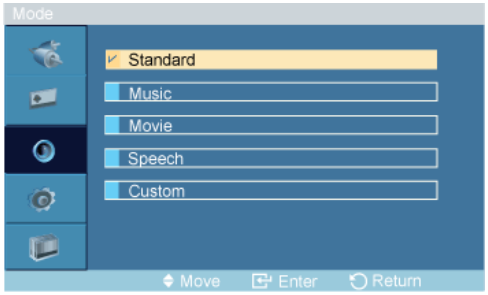
Sound

Available Modes

- **PC**
- **HDMI**
- **MagicInfo**

Mode PHM

MENU → ▼ →▼ → ENTER → [Sound] → ENTER → [Mode]



→ ▲ , ▼ → ENTER

The LCD Display has a built-in high fidelity stereo amplifier.

1. **Standard**

   Selects **Standard** for the standard factory settings.

2. **Music**

   Selects **Music** when watching music videos or concerts.

3. **Movie**

   Selects **Movie** when viewing movies.

4. **Speech**

   Selects **Speech** when watching a show that is mostly dialog (i.e., news).

5. **Custom**

   Selects **Custom** if you want to adjust the settings according to your personal preferences.

Custom PHM

The sound settings can be adjusted to suit your personal preferences.

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MENU → ▼ →▼ → ENTER → [Sound] →▼→ ENTER → [Custom]

Note

- You can hear the sound even when sound value is set to 0.
- If you adjust sound using **Custom** function, **Mode** will turn to **Custom** mode.

Bass

MENU → ▼ →▼ → ENTER → [Sound] →▼→ ENTER → [Custom]→ENTER→ [Bass]

→ ◀, ▶ → ENTER

Emphasizes low frequency audio.

Treble

MENU → ▼ →▼ → ENTER → [Sound] →▼→ ENTER → [Custom] → ▼ → ENTER → [Treble]

→ ◀, ▶ → ENTER

Emphasizes high frequency audio.

Balance

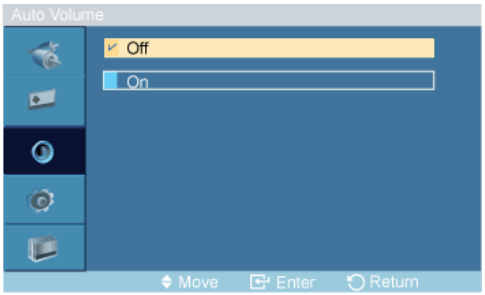
MENU → ▼ →▼ → ENTER → [Sound] →▼→ ENTER → [Custom] → ▼ → ▼ → ENTER → [Balance]

→ ◀, ▶ → ENTER

Allows you to Adjusts the sound balance between the left and right speakers.

Auto Volume PHM

MENU → ▼ →▼ → ENTER → [Sound] →▼→▼→ ENTER → [Auto Volume]



→ ▲ , ▼ → ENTER

Reduces the difference in volume control between broadcasters.

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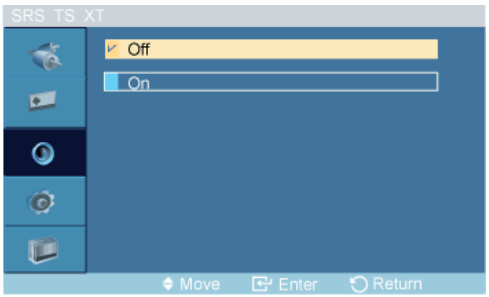
1. **Off**

2. **On**

SRS TS XT PHM

MENU → ▼ →▼ → ENTER → [Sound] →▼→▼→▼→ ENTER → [SRS TS XT]



→ ▲ , ▼ → ENTER

SRS TS XT is a patented SRS technology that solves the problem of playing 5.1 multichannel content over two speakers. TruSurround delivers a compelling, virtual surround sound experience through any two-speaker playback system, including internal television speakers. It is fully compatible with all multichannel formats.

1. **Off**

2. **On**

Setup

Available Modes

- **P PC**
- **H HDMI**
- **M MagicInfo**

Language PHM

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ENTER → [Language]

→ ▲ , ▼ → ENTER

You can choose one of 13 languages.

English,Deutsch,Español,Français,Italiano,Svenska,Русский
Português,Türkçe, 简体中文, 繁體中文, 日本語, 한국어

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Note

The language chosen affects only the language of the OSD. It has no effect on any software running on the computer.

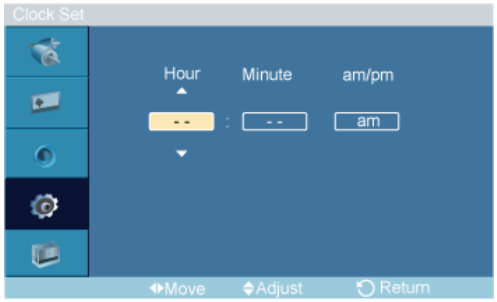
Time PHM

Selects from one of 4 time settings, **Clock Set**, **Sleep Timer**, **On Timer**, and **Off Timer**.

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼ → ENTER → [Time]

Clock Set

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼ → ENTER → [Time]→ ENTER→ [Clock Set]



→ ▲ , ▼ / ◀, ▶ → ENTER

Current Time Setting.

Sleep Timer

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼ → ENTER → [Time]→ ▼ → ENTER→ [Sleep Timer]

→ ▲ , ▼ → ENTER

Turns the LCD Display off automatically at certain times.

1. **Off**
2. **30**
3. **60**
4. **90**
5. **120**
6. **150**

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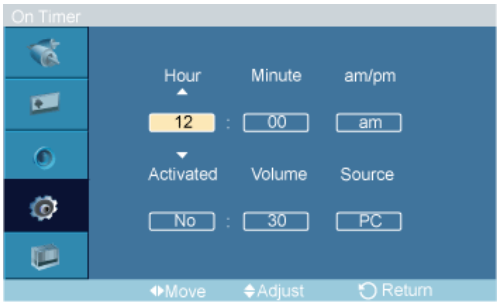
7. **180**

On Timer

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼ → ENTER → [Time]→ ▼→ ▼ → ENTER→ [On Timer]



→ ▲ , ▼ / ◀, ▶ → ENTER

Turns the LCD Display on automatically at a preset time. Controls the mode and the volume level at the time the LCD Display turns on automatically.

Off Timer

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼ → ENTER → [Time]→ ▼→ ▼→ ▼ → ENTER → [Off Timer]

→ ▲ , ▼ / ◀, ▶ → ENTER

Turns the LCD Display off automatically at a preset time.

Menu Transparency PHM

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼ → ENTER → [Menu Transparency]

→ ▲ , ▼ → ENTER

Change the transparency of the background of the OSD.

1. **High**

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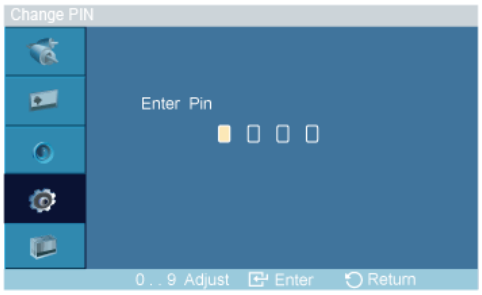
2. **Medium**
3. **Low**
4. **Opaque**

Safety Lock PHM

Change PIN

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼ → ENTER → [**Safety Lock**]→ ENTER→ [**Change PIN**]

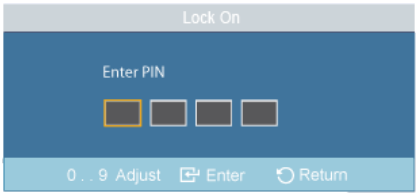


→ [0~9]→ [0~9]→ [0~9]→ [0~9]

The password can be changed.

Lock On

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼ → ENTER → [**Safety Lock**]→ ENTER→▼ → ENTER→[Lock On]

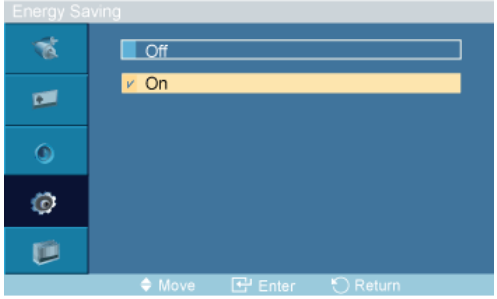


→ [0~9]→ [0~9]→ [0~9]→ [0~9]

Turns Off/On the **Video Wall** function of the selected display Off/On.

Energy Saving PHM

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ENTER → [Energy Saving]



→ ▲ , ▼ → ENTER

This feature adjusts the power consumption of the unit in order to save energy.

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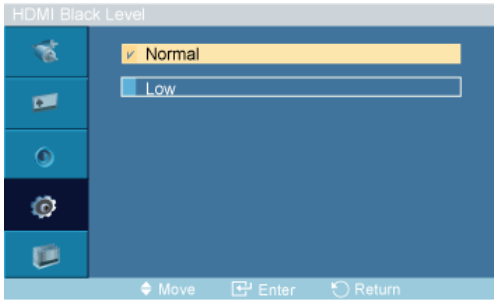
1. **Off**
2. **On**

HDMI Black Level H

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ENTER → [HDMI Black Level]



→ ▲ , ▼ → ENTER

When a DVD or set-top box is connected to your TV via HDMI, it may cause a degradation in the screen quality, such as an increase in the black level, a low contrast, or discoloration, etc., depending on the external device connected. In this case, adjust the screen quality of your TV by configuring the **HDMI black level**.

1. **Normal**
2. **Low**

Video Wall PH

A **Video Wall** is a set of video screens connected together, so that each screen shows a part of the whole picture or where the same picture is repeated on each screen.

When the **Video Wall** is on, you can adjust the **Video Wall** screen setting.

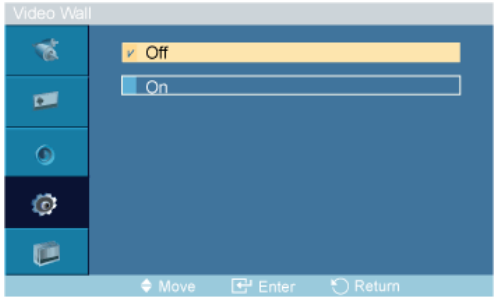
MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ENTER → [Video Wall]

Note

When **Video Wall** is running, the **Auto Adjustment**, **Image Lock**, and **Size** functions are not available. **Video Wall** does not operate in **MagicInfo** mode.

Video Wall

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ENTER → [Video Wall] → ENTER → [Video Wall]



→ ▲ , ▼ → ENTER

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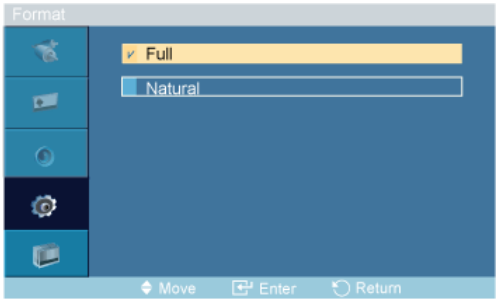
Turns Off/On the **Video Wall** function of the selected display Off/On.

1. **Off**
2. **On**

Format

MENU → ▼ → ▼ → ▼ → ENTER → [Setup] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Video Wall] → ▼ → ENTER → [Format]



→ ▲ , ▼ → ENTER

The **Format** can be selected to see a divided screen.

1. **Full**

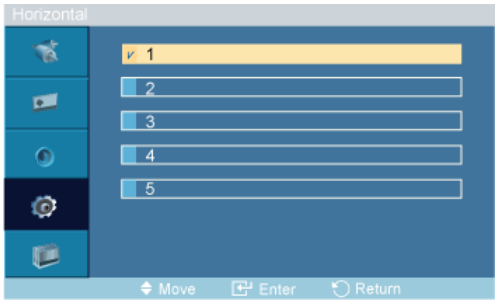
   Provides a full screen without any margins.

2. **Natural**

   Displays a natural image with the original aspect ratio intact.

Horizontal

MENU → ▼ → ▼ → ▼ → ENTER → [Setup] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Video Wall] → ▼ → ▼ → ENTER → [Horizontal]



→ ▲ , ▼ → ENTER

Sets how many parts the screen should be divided horizontally.

Five adjustment levels: 1, 2, 3, 4, and 5.

Vertical

MENU → ▼ → ▼ → ▼ → ENTER → [Setup] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Video Wall] → ▼ → ▼ → ▼ → ENTER → [Vertical]

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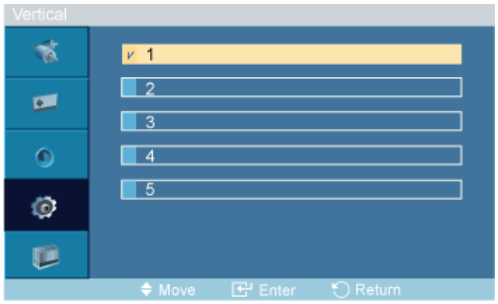

→ ▲ , ▼ → ENTER

Sets how many parts the screen should be divided vertically.

Five adjustment levels: 1, 2, 3, 4, and 5.

Screen Divider

MENU → ▼ → ▼ → ▼ → ENTER → [Setup] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Video Wall] → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Screen Divider]

The screen can be divided into several images. A number of screens can be selected with a different layout when dividing.

- Select a mode in Screen Divider.
- Select a display in Display Selection.
- The selection will be set up by pressing a number in the selected mode.

Safety Screen PHM

The **Safety Screen** function is used to prevent afterimages that may appear when a still picture is displayed on the screen over a long time.

- The **Safety Screen** function scrolls the screen for the specified period of time.
- This function is not available when the power is turned off.

MENU → ▼ → ▼ → ▼ → ENTER → [Setup] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]

Pixel Shift

Pixel Shift

MENU → ▼ → ▼ → ▼ → ENTER → [Setup] → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen] → ENTER → [Pixel Shift] → ENTER → [Pixel Shift] → ▲ , ▼ → ENTER

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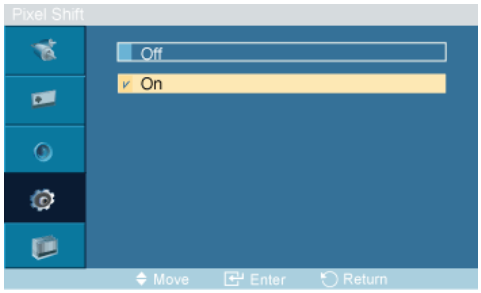


To prevent after-images on the screen you can use this function have pixels move on the LCD in the horizontal or vertical direction.

1. **Off**
2. **On**

Horizontal Dot

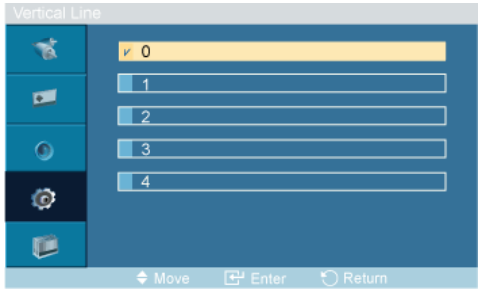
MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]→ ENTER → [Pixel Shift]→ ▼ → ENTER → [Horizontal Dot]→ ▲ , ▼ → ENTER

Sets how many pixels the screen moves horizontally.

Five adjustment levels: 0, 1, 2, 3, and 4.

Vertical Line

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]→ ENTER → [Pixel Shift]→ ▼ →▼ → ENTER → [Vertical Line]→ ▲ , ▼ → ENTER



Sets how many pixels the screen moves vertically.

Five adjustment levels: 0, 1, 2, 3, and 4.

Time

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]→ ENTER → [Pixel Shift]→ ▼ →▼ →▼ → ENTER → [Time]→ ▲ , ▼ → ENTER

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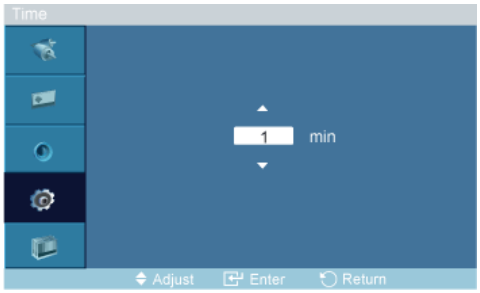
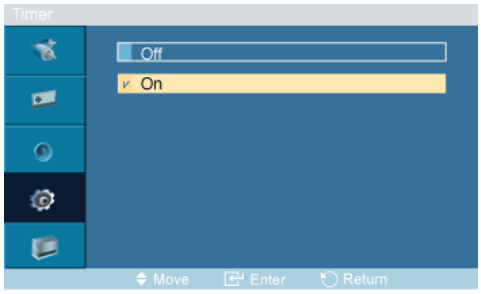


Set the time interval for performing the horizontal or vertical movement, respectively.

Timer

Timer

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]→ ▼ → ENTER → [Timer]→ ENTER → [Timer]→ ▲ , ▼ → ENTER



You can set the timer for Screen Burn Protection.

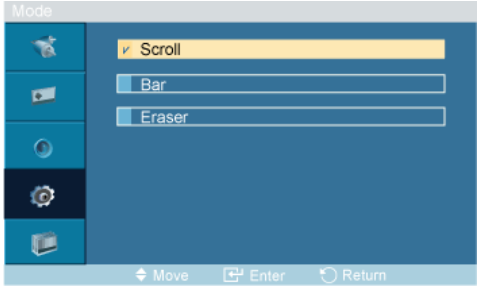
If you start the operation to erase any residual image, the operation will be performed for the set period of time and then automatically finish.

1. **Off**

2. **On**

Mode

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]→ ▼ → ENTER → [Timer]→ ▼ → ENTER → [Mode]→ ▲ , ▼ → ENTER



You can change the **Safety Screen** Type.

1. **Scroll**

2. **Bar**

3. **Eraser**

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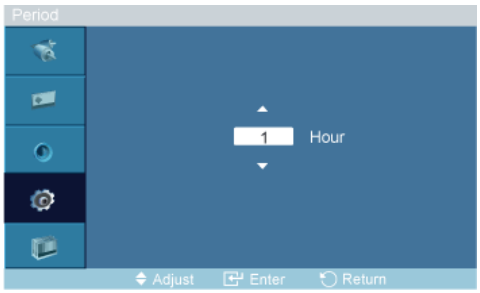
Period

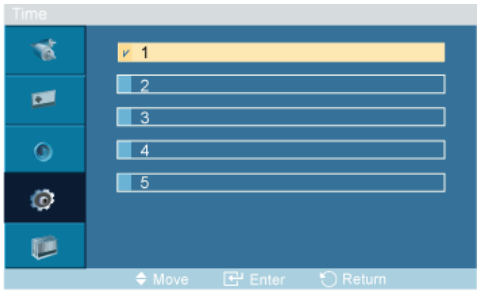
MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]→ ▼ → ENTER → [Timer]→ ▼ → ▼ → ENTER → [Period]→ ▲ , ▼ → ENTER



Use this function to set the execution period for each mode set in the timer.

Time

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]→ ▼ → ENTER → [Timer]→ ▼ → ▼ → ▼ → ENTER → [Time]→ ▲ , ▼ → ENTER

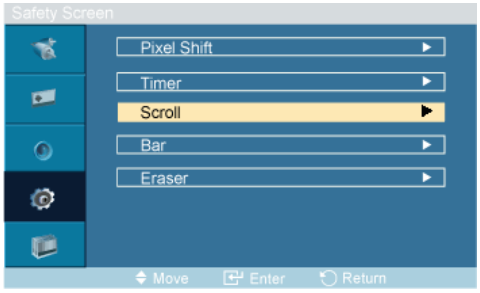


Within the set period of time specify a time for execution.

- **Mode-Scroll** : 1~5 **sec**
- **Mode-Bar**, **Eraser** : 10~50 **sec**

Scroll

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]→ ▼ → ▼ → ENTER → [Scroll]



This function helps to remove after-images on the screen by moving all the pixels on the LCD according to a pattern.

Use this function when there are remaining after-images or symbols on the screen, especially when you displayed a still image on the screen for a long time.

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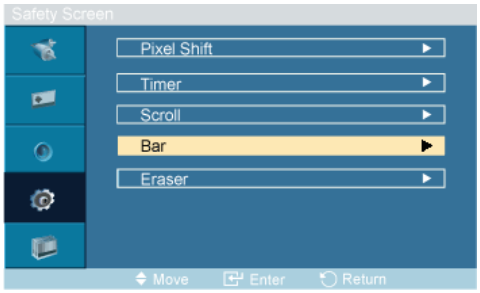
Bar

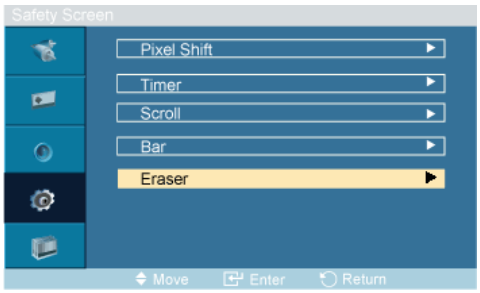
MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]→ ▼ → ▼ → ▼ →ENTER → [Bar]



This function prevents after-images on the screen by moving long black and white vertical lines.

Eraser

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ENTER → [Safety Screen]→ ▼ → ▼ → ▼ → ▼ →ENTER → [Eraser]



This function prevents after-images on the screen by moving a rectangular pattern.

Resolution Select

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ▼ →ENTER → [Resolution Select]

→ ▲ , ▼ → ENTER

When the picture is not displayed properly on the screen when setting the graphics card resolution of the computer to 1024 x 768 @ 60Hz, 1280 x 768 @ 60Hz, 1360 x 768 @ 60Hz or 1366 x 768 @ 60Hz, by using this function(Resolution Select), you can have the picture displayed on the screen in the specified resolution.

Note

Available in **PC** mode only

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1. **Off**
2. **1024 x 768**
3. **1280 x 768**
4. **1360 x 768**
5. **1366 x 768**

Note

Selecting the menu is only allowed when the graphics resolution is set to 1024 x 768 @ 60Hz, 1280 x 768 @ 60Hz, 1360 x 768 @ 60Hz or 1366 x 768 @ 60Hz.

Power On Adjustment PHM

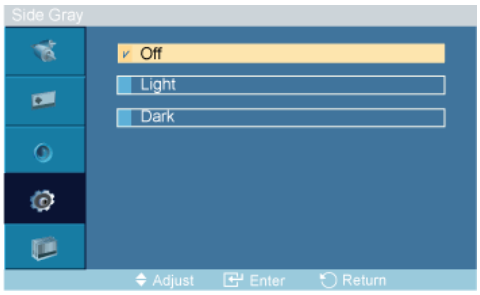
MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ▼ →▼→ ENTER → [Power On Adjustment]

→ ▲ , ▼ → ENTER

Adjusts the Power On time for the screen.

Side Gray PHM

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ▼ →▼→ ▼→ ENTER → [Side Gray]



→ ▲ , ▼ → ENTER

Select the brightness of the grey for the screen background.

1. **Off**
2. **Light**
3. **Dark**

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Reset

Reverts the product settings to factory defaults. The Reset function is only available when **PC** / **DVI** is being used.

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ▼ →▼→ ▼→ ▼ → ENTER → [Reset]

Image Reset P

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ▼ →▼→ ▼→ ▼ → ENTER → [Reset]→ ENTER → [Image Reset]

→ ◄, ►→ ENTER

Note

Available in **PC** mode only

Note

The Reset function is not available when **Video Wall** is **On**.

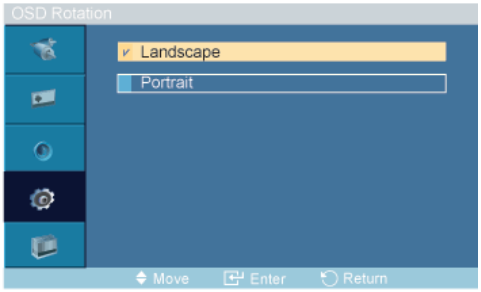
Color Reset P H M

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ▼ →▼→ ▼→ ▼ → ENTER → [Reset]→ ▼→ ENTER → [Color Reset]

→ ◄, ► → ENTER

OSD Rotation P H M

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ▼ →▼→ ▼→ ▼ → ▼→ ▼→ ENTER → [OSD Rotation]



→ ◄, ► → ENTER

OSD Rotate

1. **Landscape**
2. **Portrait**

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Lamp Control PHM

MENU → ▼ →▼ →▼ → ENTER → [Setup] → ▼→ ▼→ ▼→ ▼ → ▼ → ▼ → ▼ → ▼ →▼→ ▼→ ▼ → ▼→ ENTER → [Lamp Control]

→ ◄, ► → ENTER

Adjusts the inverter lamp in order to reduce energy consumption.

Note

Not available when **Dynamic Contrast** mode is set to **On**.

Multi Control

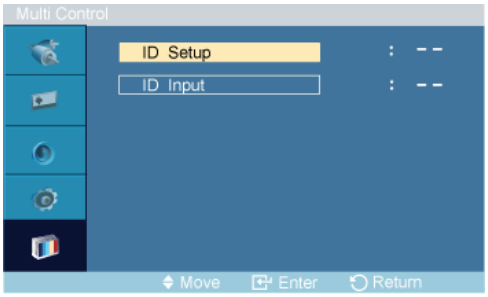
Available Modes

- **PC**
- **HDMI**
- **MagicInfo**

Multi Control PHM

Assigns an individual ID to the SET.

MENU → ▼ →▼ →▼ → ▼ → ENTER → [Multi Control]→ ENTER



→▲ , ▼→ [0~9]

- **ID Setup**

  Assigns distinctive IDs to the SET.

- **ID Input**

  Use to select the transmitter functions of the individual SET. Only a SET where the ID corresponds to the transmitter setting becomes activated.

MagicInfo

Available Modes

- **PC**
- **HDMI**

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- **MagicInfo**

Note

- The remote control can be used to select **MagicInfo**. However, it is recommended to use a separate USB keyboard to utilize **MagicInfo** fully.
- For **MagicInfo** in Device mode, moving external devices while booting may cause errors. Set up external devices only if the LCD Display turns on.
- Do not unplug the LAN cable used for the network (ex: video display). Otherwise, the program (MagicInfo) may stop. If you do unplug the cable, restart the system.
- Do not unplug the LAN cable used by an USB device (ex: video display). Otherwise, the program (MagicInfo) may stop.
- To access other sources, press the SOURCE button in **MagicInfo**.
- The preset password for the LCD Display is "000000".
- The server program's Power-On option works only if the LCD Display's power is completely shut off.

  Please make sure not to use the Power-On option when the LCD Display is in the process of shutting down since this may cause system errors on the LCD Display.
- In the OSD image of **MagicInfo**, Network mode is the same as Device.
- When using **MagicInfo** with the MagicInfo Server Program: perform Network mode.
- When using **MagicInfo** with the device directly connected to LCD Display : execute Device mode.
- Press ALT + F12 to directly go to the **MagicInfo** Window screen.
- To setup **MagicInfo** on a Windows screen, a keyboard and mouse are required.
- To setup **MagicInfo** on a Windows screen, refer to the MagicInfo Server Help.

  It is highly recommended not to turn off the AC power during an operation.
- For pivoted LCD Displays, ticker transparency is not supported.
- For pivoted LCD Displays, a screen resolution of up to 720*480(SD) is supported for movies.
- For drive D:, **EWF** is not applied.
- To save Setup contents that have been changed when **EWF** is in the **Enable** state, you must **Commit** them.
- By selecting **Disable**, **Enable** or **Commit**, the system is restarted.

MagicInfo

1. Select Application - step 1

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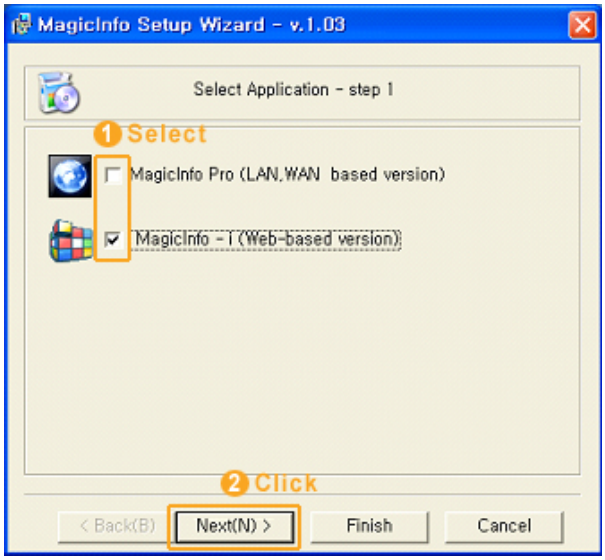
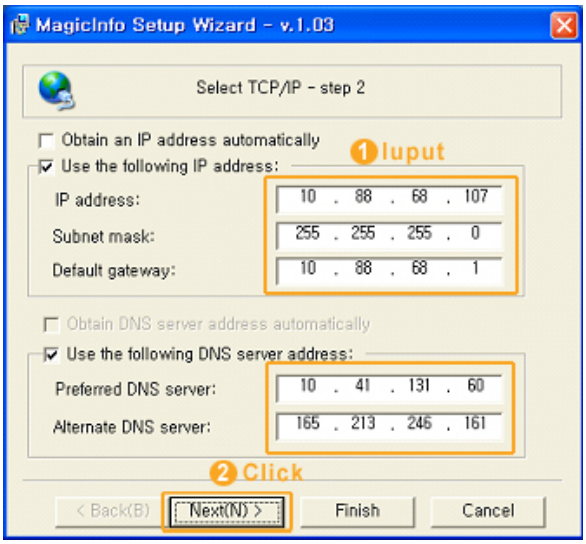


You can select an Application to be executed in your computer when Windows starts.

2. Select TCP/IP - step 2


MagicInfo Setup Wizard - v.1.03
Select TCP/IP - step 2
Obtain an IP address automatically
Use the following IP address:
1 Iuput
IP address:
10 . 88 . 68 . 107
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
10 . 88 . 68 . 1
Obtain DNS server address automatically
Use the following DNS server address:
Preferred DNS server:
10 . 41 . 131 . 60
Alternate DNS server:
165 . 213 . 245 . 161
2 Click
< Back(B)
Next(N) >
Finish
Cancel

In step 2 of MagicInfo Setup Wizard, you don’t have to go to Network Setting on the desktop to make your settings for TCP/IP. You just do that at step 2 of **MagicInfo** installation.

3. Select Language - step 3

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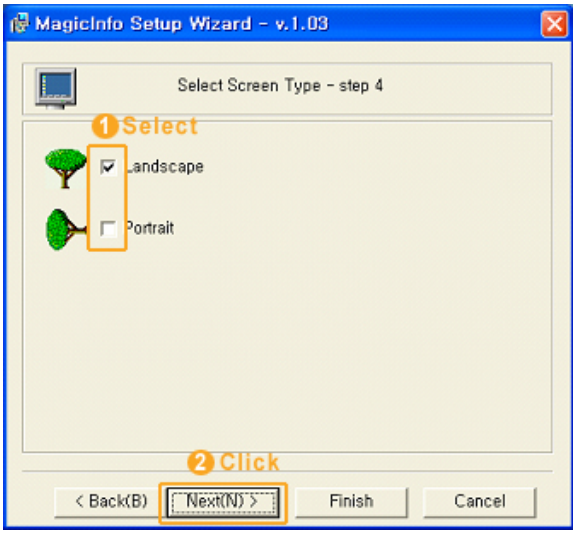
When using multiple languages, you can choose and set a specific language among them.

4. Select Screen Type - step 4



You can select which rotation type will be applied to your device.

5. Setup Information

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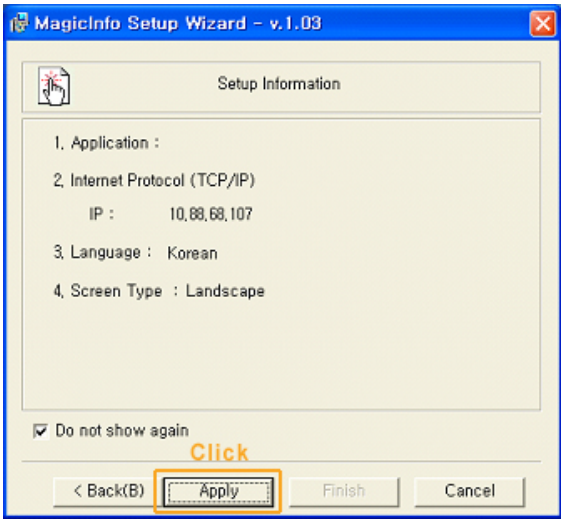

Shows the settings that have been selected by the user.

Note

If the **MagicInfo** icon is not displayed on the notification area, double click the **MagicInfo** icon on the window desktop. The icon will appear.

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Troubleshooting

Self-Test Feature

Note

Before you call for assistance, run a self-test to see if the monitor is working correctly. Contact a Service Center for problems that you cannot solve by yourself.

Running a Self-Test

1. Turn off both your computer and the LCD Display.
2. Unplug the video cable from the back of the computer.
3. Turn on the LCD Display.

   The figure shown below ("**Check Signal Cable**") appears on a black background when the LCD Display is working normally even though no video signal is detected: While in the Self-Test mode, the LED power indicator remains green and the figure moves around on the screen.

4. Turn off your LCD Display and reconnect the video cable; and then turn on both your computer and the LCD Display

If your LCD Display screen remains blank after you've run a self-test, check your video controller and computer system. Your LCD Display is functioning properly.

Warning Messages

If you set your monitor to a resolution and refresh rate it does not support, you will see the message below for a minute on your screen. During that minute, you must reset the resolution and refresh rate to a supported refresh rate and resolution. If the refresh rate is more than 85Hz, you will see a black screen because the LCD Display does not support a refresh rate over 85Hz.

Note

Refer to Specifications > Preset Timing Modes for the resolutions and frequencies supported by the LCD Display. Your LCD Display automatically supports the Preset Timing Modes.

Maintenance and Cleaning

1) Maintaining the LCD Display Case

Clean with a soft cloth after disconnecting the power cord.

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- Do not use benzene, thinner or other flammable substances.

2) Maintaining the Flat Panel Display Screen.

Clean with a soft cloth (cotton flannel).

- Never use acetone, benzene or thinner.

  (They may cause flaws or deformation of the screen surface.)

- The user is responsible for any damage caused by using these substances.

Symptoms and Recommended Actions

Note

A LCD Display recreates visual signals received from the computer. Therefore, if there is a problem with the computer or the video card, this can cause the LCD Display to become blank, have poor coloring, become noisy, etc. If you are having one of thes problems, perform the following checks on your computer.

1. Check if the power cord and the video cables are properly connected to the computer.
2. Check if the computer beeps more than 3 times when booting. If it does, it may need service.
3. If you installed a new video card or if you assembled the PC, check if you installed the video adaptor driver.
4. Check if the scanning ratio of the video screen is set to between 50 Hz ~ 85 Hz.

   Important: Do not exceed 60Hz when using the maximum resolution.
5. If you have problems in installing the video adaptor driver, boot the computer in Safe Mode, remove the Display Adaptor in the "Control Panel −> System −> Device Administrator" and then reboot the computer to reinstall the video adaptor driver.

Check List

Note

- The following sections lists possible problems and their solutions. Before calling for assistance, check the information in this section to see if you can remedy any problems for yourself. If you do need assistance, please call the phone number on the Information section or contact your dealer.
- For more network-related information, refer to the MagicInfo Troubleshooting section.

Problems Related to the Installation (PC Mode)

Note

Problems related to the LCD Display installation and their solutions are below.

Q: The LCD Display screen flickers.

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A: Check if the signal cable between the computer and the LCD Display is securely connected.

(Refer to Connecting a Computer)

Problems Related to the Screen

Note

Problems related to the LCD Display screen and their solutions are listed below.

Q: The screen is blank and the power indicator is off.

A: Ensure that the power cord is firmly connected and the LCD Display is on.

(Refer to Connecting a Computer)

Q: "**Check Signal Cable**" message.

A: Ensure that the signal cable is firmly connected to the PC or video sources.

(Refer to Connecting a Computer)

A: Ensure that the PC or video sources are turned on.

Q: "**Not Optimum Mode**" message.

A: Check the maximum resolution and the frequency of the video adaptor.

A: Compare these values with the data in the Preset Timing Modes Chart.

Q: The picture rolls vertically.

A: Check if the signal cable is securely connected. Re-connect it, if necessary.

(Refer to Connecting a Computer)

Q: The image is not clear; picture is blurred.

A: Run Frequency **Coarse** and **Fine** tuning.

A: Turn on again after removing all accessories (video extension cable, etc.)

A: Set the resolution and frequency to the recommended ranges.

Q: The picture image is unstable and shakes.

A: Check if the resolution and frequency set for the computer video card falls in the range supported by the LCD Display. If not, reset them referring to the current Information under the LCD Display menu and Preset Timing Modes

Q: Ghost images appear in the picture.

A: Check if the resolution and frequency set for the computer video card falls in the range supported by the LCD Display. The optimum resolution and refresh rate for this monitor is listed in the Specifications section under General Specifications. Other supported resolutions and refresh rates are listed in the Preset Timing Modes table also in the Specifications section.

Q: The image is too light or too dark.

A: Adjust the **brightness** and **contrast**.

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(Refer to the **Brightness**, **Contrast**)

Q: The screen color is inconsistent.

A: Adjust color using Color under **Custom** in the Picture OSD menu.

Q: The color image is distorted by dark shadows.

A: Adjust color using **Custom** under OSD Color Adjustment menu.

Q: The color white is poor.

A: Adjust the color using **Color** under **Custom** in the **Picture** OSD menu.

Q: The Power Indicator blinks.

A: The LCD Display is currently saving the changes made in the settings to the OSD memory.

Q: The screen is blank and the power indicator light blinks every 0.5 or 1 seconds.

A: The LCD Display is using its power management system. Press any key on the keyboard.

Q: The screen is blank and it is blinking.

A: If you see the "**TEST GOOD**" message on the screen when you pressing the MENU button, check the cable connection between the LCD Display and the computer to ensure that the connector is properly connected.

Problems Related to Audio

Note

Problems related to audio signals and their solutions are listed below.

Q: No sound.

A: Ensure that the audio cable is firmly connected to both the audio-in port on your LCD Display and the audio-out port on your sound card.

(Refer to Connecting a Computer)

A: Also, check the volume level.

Q: The sound level is too low.

A: Check the volume level.

A: Also, if the volume is still too low after turning the control to its maximum, check the volume control on the computer sound card or software program.

Q: The sound is too high or too low.

A: Adjust the **Treble** and **Bass** to the appropriate levels.

Problems Related to the Remote Control

Note

Problems related to the remote control and their solutions are listed below.

Q: The remote control buttons do not respond.

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A: Check if the batteries are empty.

A: Check if the power is on.

A: Check if the power cord is securely connected.

A: Check if a special fluorescent or neon lamp is on in the vicinity.

Q & A

Q: How can I change the frequency?

A: Windows XP:

Click Start > Settings > Control Panel > Appearance and Themes > Display > Settings > Advanced > Monitor Tab. Then, select the refresh rate frequency. The optimum refresh rate is 60 Hz..

A: Windows ME./2000:

Click Control Panel > Display > Settings > Advance > Monitor Tab. Then, select the refresh rate frequency. The optimum refresh rate is 60 Hz.

Q: How can I adjust the resolution?

A: Windows XP:

Set the resolution in the Control Panel→ Appearance and Themes → Display→ Settings.

A: Windows ME/2000:

Set the resolution in the Control Panel→ Display→ Settings.

* Contact the video card manufacturer for details.

Q: How can I set the Power Saving function?

A: Windows XP:

Click Start > Settings > Control Panel → Appearance and Themes → Display → Screen Saver.

Set the function in the BIOS-SETUP of the computer. (Refer to the Windows / Computer Manual).

A: Windows ME/2000:

Click Start > Settings > Control Panel → Display → Screen Saver.

Set the function in the BIOS-SETUP of the computer. (Refer to the Windows / Computer Manual).

Q: How can I clean the outer case/LCD Panel?

A: Disconnect the power cord, and then clean the LCD Display with a soft cloth moistened with a small amount of an LCD screen cleaning solution or plain water.

Do not leave any detergent or scratches on the case. Do not let any water enter the LCD Display. Do not spray any liquid onto the LCD display. Spray on the cloth only.

Q: How can I play the video?

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A: The video supports the MPEG1 and WMV codecs only. Install the corresponding codec to play the video. Note that some of the codecs can be incompatible.

Note

Before calling for assistance, check the information in this section to see if you can remedy any problems yourself. If you do need assistance, please call the phone number on the Information section or contact your dealer.

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Specifications

General

General	
Model Name	SyncMaster 230TSN, 230MXN

LCD Panel	
Size	23 inches (58 cm)
Display area	509.76 mm (H) x 286.74 mm (V)
Pixel Pitch	0.2655 mm (H) x 0.2655 mm (V)

Synchronization	
Horizontal	31 ~ 81 kHz
Vertical	56 ~ 75 Hz

Display Color

16.7 M

Synchronization	
Optimum resolution	1920 x 1080 @ 60 Hz
Maximum resolution	1920 x 1080 @ 60 Hz

Input Signal, Terminated

1 RGB Analog, HDMI

0.7 Vp-p ±5 %

Separate H/V sync, Composite, SOG

TTL level (V high ≥ 2.0 V, V low ≤ 0.8 V)

Maximum Pixel Clock

164MHz (Analog,Digital)

Power Supply

This product supports 100 – 240 V.

Since the standard voltage may differ from country to country, please check the label on the back of the product.

Less than 30Ap-p at AC 120V or 50Ap-p at AC 220V

Signal Connectors

D-sub, HDMI, RS232C In, PC Audio(Stereo) In, Audio Out, LAN, USB(4port), VGA OUT(Network)

Dimensions (W x H x D) / Weight	
SyncMaster 230TSn	557.5 x 339.0 x 79.2 mm / 21.9 x 13.3 x 3.1 inches / 8.35 kg / 18.4 lb

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Dimensions (W x H x D) / Weight	
SyncMaster 230MXn	557.5 x 339.0 x 73.9 mm / 21.9 x 13.3 x 2.9 inches / 7 kg / 15.4 lb

VESA Mounting Interface
100 x 100mm

Environmental considerations	
Operating	Temperature : 50°F ~ 104°F (10°C ~ 40°C) Humidity : 10 % ~ 80 %, non-condensing
Storage	Temperature : -4°F ~ 113°F (-20°C ~ 45°C) Humidity : 5 % ~ 95 %, non-condensing

Plug and Play Capability

This LCD Display can be installed on any Plug & Play compatible system. The interaction of the LCD Display and the computer systems will provide the best operating conditions and LCD Display settings. In most cases, the LCD Display installation will proceed automatically, unless the user wishes to select alternate settings.

Dot Acceptable

TFT-LCD panels manufactured using advanced semiconductor technology with a precision of 1ppm (one part per million) and above are used for this product. Sometimes, pixels of RED, GREEN, BLUE and WHITE color appear to be bright or some black pixels may be seen. This does not indicated bad quality and you can use the monitor without any problems.

The number of TFT-LCD sub pixels contained in this product are 6,220,800.

Note

Design and specifications are subject to change without prior notice.

Class B Equipment (Information Communication equipment for residential use)

This product complies with the Electromagnetic Compatibility Directives for residential use and can be used in all areas including common residential areas. (Class B equipment emits less electromagnetic waves than Class A equipment.)

(USA only)

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website:

www.samsung.com/recyclingdirect Or call, (877) 278 - 0799

PowerSaver

This LCD Display has a built-in power management system called PowerSaver. This system saves energy by switching your LCD Display to low-power mode when it has not been used for a certain amount of time. The LCD Display automatically returns to normal operation when you press a key on the keyboard. For energy conservation, turn your LCD Display OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPM compliant video card installed in your computer. Use the software utility installed on your computer to set up this feature.

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State	Normal Operation	Power saving mode	Power off
Power Indicator	On	Blinking	Off
Power Consumption	80 watts	5 watts	0 watts

Preset Timing Modes

If you select one of the standard Display Modes listed below (for example, 800x600 or 1360x768), your monitor will automatically adjust your screen to the correct Horizontal and Vertical frequency. However, if you attempt to use a non-standard Display Mode, the screen may go blank even though the power LED indicates the monitor is on. Note that the optimum and recommended Display Mode for this monitor is 1920x1080 with a refresh rate of 60 Hz. If you select a Display Mode of 1920x1080, your monitor will automatically adjust your screen to the correct Horizontal and Vertical frequency.

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
VESA, 640 x 480	31.469	59.940	25.175	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	+/+
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1152 x 864	67.500	75.000	108.000	+/+
VESA, 1280 x 800	49.702	59.810	83.500	-/+
VESA, 1280 x 800	62.795	74.934	106.500	-/+
VESA, 1280 x 960	60.000	60.000	108.000	+/+
VESA, 1280 x 1024	63.981	60.020	108.000	+/+
VESA,1440 x 900	55.935	59.887	106.500	-/+
VESA,1440 x 900	70.635	74.984	136.750	-/+
VESA,1600 x 1200	75.000	60.000	162.000	+/+
VESA,1680 x 1050	65.290	59.954	146.250	-/+
VESA,1920 x 1080	67.500	60.000	148.500	+/+

Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called the Horizontal Cycle and the inverse number of the Hor-

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izontal Cycle is called the Horizontal Frequency. Unit: kHz

Vertical Frequency

Like a fluorescent lamp, the screen has to repeat the same image many times per second to display an image to the user. The frequency of this repetition is called the Vertical Frequency or Refresh Rate. Unit: Hz

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Information

For Better Display

For the best picture quality, adjust the computer resolution and screen injection rate (refresh rate) on the computer to the resolution and refresh rate listed below..

- Resolution: 1920 X 1080
- Vertical frequency (refresh rate): 60 Hz

TFT-LCD panels manufactured using advanced semiconductor technology with a precision of 1ppm (one part per million) and above are used for this product. Sometimes, the pixels of RED, GREEN, BLUE and WHITE color seem to be bright or some black pixels may be seen. This does not indicate bad quality and you can use the monitor without any problems.

- The number of TFT-LCD sub pixels contained in this product is 6,220,800.

To clean the monitor and the panel outside, apply the recommended small amount of cleaner to a clean, soft cloth and then rub softly, especially when cleaning the LCD area. Using excessive force can permanently damage the screen.

If you are not satisfied with the picture quality, you can get a better quality picture by using the Auto Adjustment function in the OSD Menu. If there's still noise after the automatic adjustment, use the Fine/Coarse adjustment functions. Note that the Auto Adjustment functon works in Analog mode only.

When viewing a fixed screen for an extended period of time, a residual image or blurriness may appear. To prevent this, change the mode to energy save or set up a screensaver that displays a moving the picture when you need to be away from the monitor for an extended period of time.

PRODUCT INFORMATION (Image Retention Free)

LCD Monitors and TVs may have image retention when switching from one image to another especially after displaying a stationary image for a long time.

This guide is to demonstrate correct usage of LCD products in order to protect them from Image retention.

Warranty

Warranty does not cover any damage caused by image retention.

Burn-in is not covered by the warranty.

What is Image retention ?

During normal operation of a LCD panel, pixel image retention doesn't occur. However, if the same image is displayed for a long time, a slight difference in electric charge accumulates between the two electrodes which encase the liquid crystal. This may cause the liquid crystal to build up in a certain areas of the display. Thus, the previous image is retained when switching to a new video image. All display products, including LCD, are subject to image retention. This is not a product defect.

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Please follow the suggestions below to protect your LCD from image retention.

Power Off, Screen Saver, or Power Save Mode

Ex)

- Turn the power off when using a stationary pattern.
  - Turn the power off for 4 hours after 20 hours in use
  - Turn the power off for 2 hours after 12 hours in use
- Use a Screen saver if possible
  - Screen saver in one color or a moving image is recommended.
- Set the Monitor to power off with the PC Display Properties Power Scheme.

Suggestions for specific applications

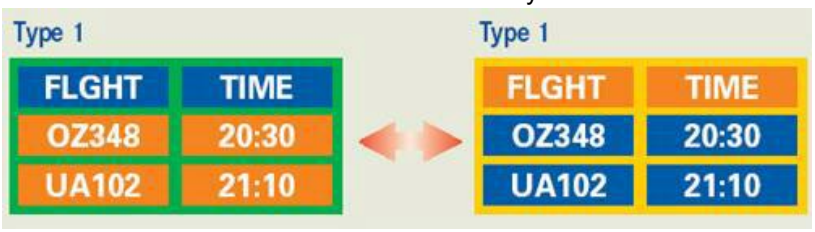
Ex) Airports, Transit Stations, Stock Markets, Banks, and Controlling Systems We recommend that you follow set up of your display system program as below:

Display Information together with Logo or Moving image cycle.

Ex) Cycle : Display Information for 1 hour followed by a Display Logo or moving image for 1 minute.

Change the Color Information periodically (Use 2 different colors).

Ex) Rotate the Color Information with 2 colors every 30 minutes.



Avoid using a combination of characters and background color with large difference in luminance.

Avoid using Grey colors, which can cause Image retention easily.

- Avoid: Colors with big difference in luminance (Black & White, Grey)

  Ex)

- Recommended settings: Bright colors with little difference in luminance
  - Change the characters color and background color every 30 minutes

    Ex)

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- Every 30 minutes, change the characters with movement.

  Ex)

The best way to protect your monitor from Image retention is to set your PC or System to operate a Screen Saver program when you are not using it.

Image retention may not occur when a LCD panel is operated under normal conditions.

Normal conditions are defined as continuously changing video patterns. When the LCD panel is operated for a long time with a fixed pattern (-over 12 hours-), there may be slight difference in voltage between electrodes that work the liquid crystal (LC) in a pixel. The voltage difference between electrodes increases with time, forcing the liquid crystal to lean. When this occurs, the previous image may be seen when the pattern is changed.

To prevent this, the accumulated voltage difference must be decreased.

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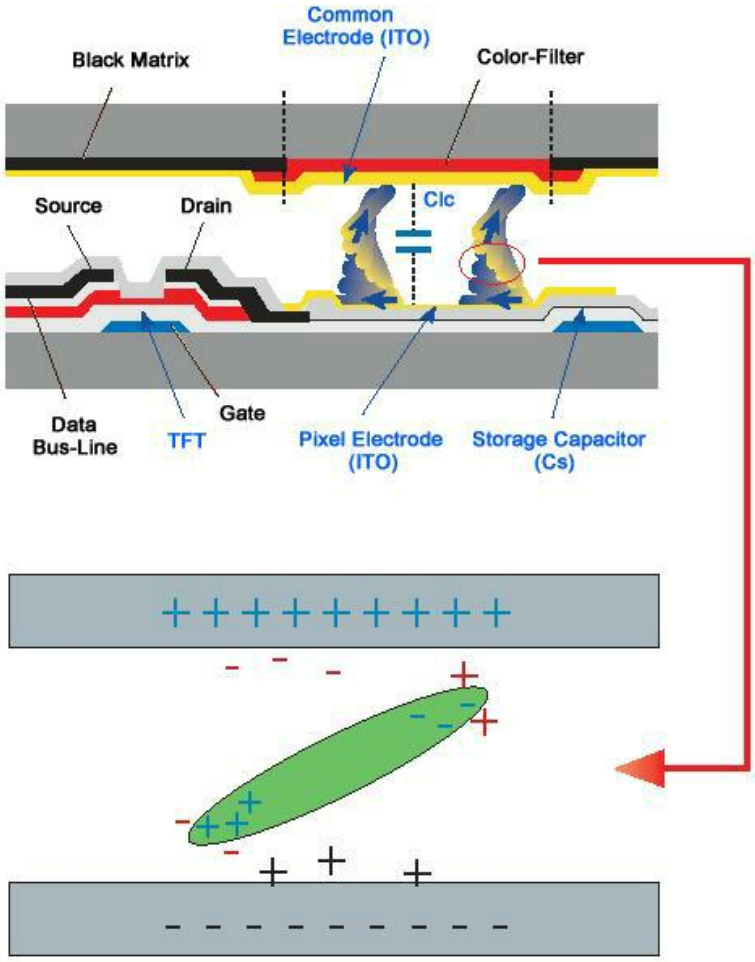

Our LCD Monitor satisfies ISO13406-2 Pixel fault Class II

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Appendix

Contact SAMSUNG WORLDWIDE

Note

If you have any questions or comments relating to Samsung products, please contact the SAMSUNG customer care center.

North America		
CANADA	1-800-SAMSUNG (726-7864)	www.samsung.com
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Terms

Dot Pitch	The image on a monitor is composed of red, green and blue dots. The closer the dots, the higher the resolution. The distance between two dots of the same color is called the 'Dot Pitch'. Unit: mm
Vertical Frequency	The screen must be redrawn several times per second in order to create and display an image for the user. The frequency of this repetition per second is called the Vertical Frequency or Refresh Rate. Unit: Hz Example: If the same light repeats itself 60 times per second, this is regarded as 60 Hz.
Horizontal Frequency	The time to scan one line connecting the right edge to the left edge of the screen horizontally is called the Horizontal Cycle. The inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit: kHz
Interlace and Non-Interlace Methods	Showing the horizontal lines of the screen from the top to the bottom sequentially is called the Non-Interlace method while showing odd lines and then even lines in turn is called the Interlace method. The Non-Interlace method is used for the majority of monitors to ensure a clear image. The Interlace method is the same as that used in TVs.
Plug & Play	This is a function that provides the best quality screen for the user by allowing the computer and the monitor to exchange information automatically. This monitor follows the international standard VESA DDC for the Plug & Play function.
Resolution	The number of horizontal and vertical dots used to compose the screen image is called the 'resolution'. This number shows the accuracy of the display. A high resolution is good for performing multiple tasks as more image information can be shown on the screen. Example: If the resolution is 1920 x 1080, this means the screen is composed of 1920 horizontal dots (horizontal resolution) and 1080 vertical lines (vertical resolution).

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SRS TS XT	This feature outputs sonorous and vivid 3D sound as for 5.1 channel speaker sound but through a 2-channel speaker. It has a good effect when stereo signals are input.

Correct Disposal

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

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Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Correct disposal of batteries in this product

(Applicable in the European Union and other European countries with separate battery return systems.)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

Note

The rechargeable battery incorporated in this product is not user replaceable. For information on its replacement, please contact your service provider.

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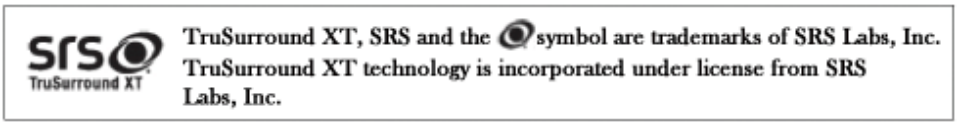
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